Cracks in the Foundation: A Transactional Study of Non-Agency Residential Mortgage-Backed Securities

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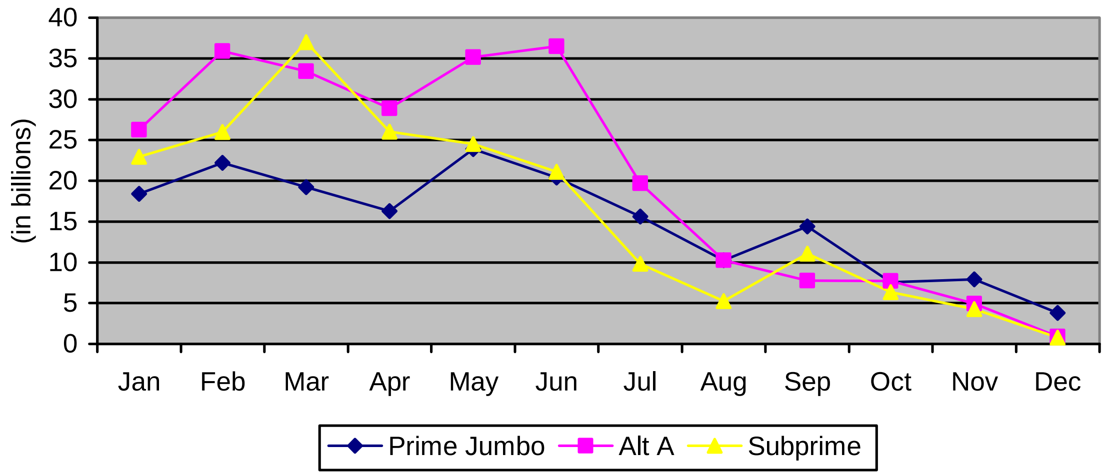
Part I Introduction

It would have been a saga of financial innovation and the coming of age of modern risk management. Within a few years' time, private-label residential mortgage-backed securities, i.e. securities issued by private entities (hence "private label") and backed by a pool of residential mortgages, rapidly grew from a niche segment to a multi-trillion-dollar business in a market jealously guarded by government-sponsored entities ("GSEs"), Fannie Mae and Freddie Mac. The triumph over the "agencies" (i.e. GSEs) was once so close, until the entire private-label RMBS market (or "non-agency" market, as compared to the "agency" market) completely collapsed in the summer of 2007 (Figure 1). The credit market was rattled. The ripple effects of the credit crisis have surprisingly resulted in the collapse of the entire world economy.

Figure 1 Non-Agency RMBS Issuance in 2007



(Source: Inside Mortgage Finance, author's own calculation)

The spectacular failure of the non-agency market has quickly turned into a blame game. Investors who got burnt by the suddenly "toxic" assets claimed that the information disclosed to them was inaccurate and insufficient. They also blamed rating agencies for rubber-stamping the garbage securities with "AAA" ratings. Rating agencies pointed fingers at loan originators for originating bad loans and investment banks for providing inaccurate information. Politicians and regulators were abhorred by trillions of dollars of CDO, CDO square and CDS that were so complex and opaque that pricing and unwinding them became an impossible mission. They were not immune to the blame game either. They turned a blind eye to the financial alchemy that led to the collective suicide of the entire financial industry.

At the center of the blame game is securitization, which has been condemned as an evil invention that enables greedy investment bankers to sell toxic mortgages disguised as AAA-rated securities. Although there are a lot of talks about what has gone wrong with securitization, unfortunately it seems that most of the criticisms on securitization of mortgage loans so far have been based on a simplified theoretical securitization model that has failed to capture the real dynamics of the actual transactions in the market. This paper fills the gap and provides a transactional analysis on non-agency residential mortgage-backed securities issued before the credit crisis.

Before diving into the details, it should first be made clear what has *not* gone wrong with the securitization process. The fundamental idea of securitization remains sound with respect to RMBS securities. Through "slicing and dicing" a future stream of cash flow into smaller streams of cash flow with different risk profiles, maturities and interest rates, the securitization process creates value by generating a higher demand for the total cash flow, in the same way that selling chicken pieces generates more profit than selling a whole chicken.[1] The basic idea of risk-based pricing is valid, too. Even if subprime loans inevitably perform worse than prime loans, the additional risk could be mitigated through legitimate credit enhancement techniques such as overcollateralization, excess spread and the senior/subordinate structure.[2]

[1] Allan Sloan, *House of Junk*, Fortune, Oct. 29, 2007, at 117.
[2] For example, one credit enhancement technique is over-collateralization. An issuer may issue bonds with a total principal of $100 million backed by a mortgage pool of $104 million. In addition, as the interest rate charged on mortgage loans is much higher than the required rate of return on mortgage-backed securities, a certain discount is possible. For an introduction on credit enhancement techniques, see Chapter 6 of THE

But these are only true if you know what you are slicing and dicing. The soundness of securitization hinges upon the question whether the future performance of the underlying cash flow could be predicted correctly so that the deal structurer could use various credit enhancement techniques in his arsenal to configure the profiles of the securities he creates accordingly and investors could also properly price the securities. During the credit crisis, it turned out that the predictions about the performance of the underlying mortgage pools of RMBS securities were deadly wrong. Investors lost confidence and the entire market collapsed within a matter of months.

Two aspects of the pricing mechanism could have contributed to the massive mispricing in the credit crisis. First, the disclosed information on the mortgage-backed securities may be insufficient and/or inaccurate to make it impossible for investors (or rating agencies on their behalf) to correctly gauge the risks. Second, the pricing/prediction techniques used by investors (or rating agencies on their behalf) may be simply flawed. This paper touches upon both. It analyzes the structures of the RMBS transactions and the motives and liability exposures of key transaction parties in the securitization process. It also provides a description on what information has actually been disclosed during the securitization process, to what extent such information has been verified through due diligence, and how rating agencies, acting on behalf of investors, use such information.

The remainder of this paper is organized as follows. Part II provides an overview of the non-agency RMBS market and a closer look at how transactions are structured. Part III describes three different disclosure activities in relation to mortgage-backed securities, i.e. disclosure to rating agencies, mandatory disclosure to investors under federal securities laws and voluntary disclosures under investment contracts or to private data vendors. Based on the discussions in Part II and Part III, Part IV analyzes the role of key transaction parties in the

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HANDBOOK OF MORTGAGE-BACKED SECURITIES (Frank J. Fabozzi eds., McGraw-Hill, 2006) (hereinafter referred to as MBS Handbook).

securitization process including investors, loan originators, rating agencies and investment banks and examines the merits of various arguments regarding the cause of the credit crisis. Part V summarizes several recent proposals to enhance the securitization process, followed by the author's comments. Part VI concludes the paper.

Part II Market Overview, Transaction Types and Deal Structures

1. Mortgage Market Overview

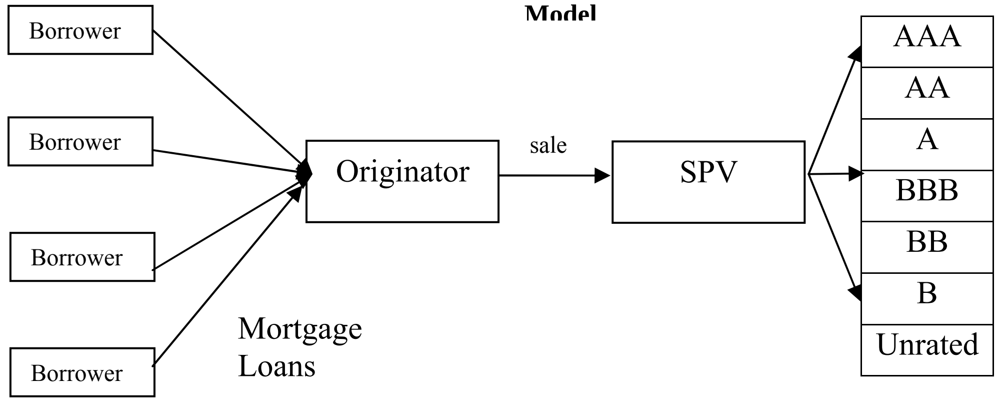
A. A Classic Mortgage Securitization Model

In a lot of economies, and which is still the case in the United States to a certain extent, banks originate mortgage loans and keep them on their balance sheets until maturity. There is no secondary market for mortgages. However, banks holding mortgages pose some problems. To start with, they need to have stable deposits to fund them. And there is a serious maturity mismatch between their assets and liabilities. Banks also want to boost their profitability by doing new business instead of passively holding a pool of mortgages and collecting their monthly payments.

The solution is to create a secondary market for residential mortgage loans. One may think that mortgage loans could be traded on a whole-loan basis, i.e. one bank would sell a portfolio of mortgage loans to another bank. This often happened between a small bank and a large bank. However, whole loan trading could not create an active secondary market because the demand for mortgage loans was confined to a small circle of banking institutions.

Here enters the brilliant idea of securitization. A textbook example of mortgage securitization almost always starts with a bank manager feeling tied up with a pool of mortgages producing stable but unimaginative monthly cash flows. The manager decides to sell off the mortgage pool through securitization. Depending on the types of assets involved, securitization may adopt different transaction forms. In the non-agency mortgage market, the trust structure described below is the most prevalent if not the exclusive structure. The bank sets up a special purpose vehicle ("SPV"), i.e., a common law trust, and then sells the mortgage pool to the SPV on a non-recourse basis. The sale must achieve the status of a "true sale" so that the bankruptcy of the originator will not affect the already securitized mortgage loans. The SPV issues a series of securities of different risk attributes backed by the mortgage portfolio. Rating agencies are brought in to judge the credit-worthiness of the securities. After securitization, the SPV is administered by an institutional trustee. The mortgage portfolio continues to be "serviced" by the originator or a third-party servicer, which collects monthly payments from the borrowers and handles defaults and foreclosures. The bank gets paid with the sales proceeds of the securities offering and can start new business with the money. Investors get a piece of security with the exact interest rate, credit profile and maturity they want. Everyone is happy.

Figure 2 Classic Originate-to-Securitize Model



B. GSE-Sponsored Securitizations

Although the securitization of many other types of assets may still follow the classic originate-to-securitize model described above, this has not been the case for residential mortgages. Until very recently, the secondary mortgage market has been dominated by two mortgage giants, Fannie Mae and Freddie Mac.[3] Both are privatized government sponsored agencies ("GSEs") chartered by the U.S. Congress. The GSEs purchase mortgages

[3] A third entity in the market is Ginnie Mae, which is directly owned by the U.S. government instead of being merely "sponsored" by the U.S. government. Ginnie Mae does not itself issue mortgage-backed securities. Instead it guarantees mortgage loans borrowed by qualified middle to low income families. These loans are then pooled and securitized by qualified Ginnie Mae issuers. The debt of Ginnie Mae is expressly guaranteed by the full faith and credit of the U.S. government. See information about Ginnie Mae on its website: http://www.ginniemae.gov/about/about.asp?Section=About.

conforming to their standards from mortgage lenders and in return either pay the sellers in cash ("cash program") or with GSE-issued securities backed by the same pool of mortgages sold by the sellers ("swap program").[4] Under the swap program, the GSEs guarantee payments on the mortgage-backed securities. If the mortgage pool could not generate sufficient cash flow to support payments to securities holders, the GSEs will make up the difference. The GSEs will also periodically issue securities guaranteed by them and backed by mortgages purchased under the cash program.

Although the GSEs "securitize" the mortgage pools, they do not need the blessings of credit rating agencies. The market has for a long time believed that the US government implicitly guarantees their debts.[5] Further, securities issued by the GSEs do not have the senior/subordinate structure. Each piece represents an undivided interest in the mortgage pool.[6] With the GSEs shouldering the credit risks, investors can focus on other risks, in particular, prepayment risks. When interest rate increases, borrowers hold on to their mortgages and the value of the mortgage-backed securities decline. When interest rate decreases, borrowers refinance their mortgages. Investors get paid before maturity and have to find other investment opportunities in a low-interest-rate environment.

Here is how securitization helps again. By pooling many of these mortgage-backed securities issued by the GSEs into another SPV and slicing and dicing the combined cash flow, an issuer may use the SPV to issue new securities backed by these securities with different interest rates and maturities, which are called collateralized mortgage obligations ("CMOs").[7] Under the new structure, some securities are paid off before others, although the

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[4] See Task Force on Mortgage-Backed Securities Disclosure, *Staff Report: Enhancing Disclosure in the Mortgage-Backed Securities Markets* (2003), http://www.ustreas.gov/press/releases/docs/disclosure.pdf, 15.
[5] Id., 8.
[6] Id., 13.
[7] See Lewis S. Ranieri, *The Origins of Securitization, Sources of Its Growth and Its Future Potential*, in A PRIMER ON SECURITIZATION (Leon T. Kendall & Michael J. Fishman eds., 2000), 36-37. For an introduction to CMO, see Depository Trust & Clearing Corporation, *Examining the Growth of the Collateralized Mortgage Obligation Market*, http://www.dtcc.com/downloads/leadership/whitepapers/cmo.pdf.

purpose is not to shift credit risk, which is guaranteed by the GSEs, but to shift the prepayment risk. The structure is defined as a “real estate mortgage investment conduit” (“REMIC”) under the Secondary Mortgage Market Enhancement Act of 1984[8] and enjoys pass-through status instead of being taxed at multiple levels after the enactment of the Tax Reform Act of 1986.[9]

C. Market Segmentation and the Room for Private Players

Because the GSEs allegedly enjoy implicit guarantees from the US government, similar mortgage securities issued by private entities do not stand a chance in competing with GSE-sponsored securities. However, as the GSEs only purchase mortgages of a certain credit quality (often called “prime loans”) up to a certain principal amount (“conforming loan limit”)[10], their power could not reach two segments of the market. One is a market for loans exceeding GSEs’ conforming loan limits (“prime jumbo loans”), which are extended to borrowers with good credit to finance the purchase of bigger-than-usual houses. The other is a market for loans to borrowers who cannot get a prime loan. Subprime loans are offered to borrowers who have a blemished credit history (e.g. having a credit score of less than 620, which is usually the cut-off score for prime loans[11]) but who are willing to pay a higher interest rate for the loan. As Figure 3 shows, a new type of mortgage in the below-prime market has grown into prominence since 2002 – “Alt A” loans are offered to borrowers who have relatively good credit history but could not satisfy all the GSE underwriting standards for reasons such as limited or low documentation of income, higher loan-to-value ratios,

[8] Pub. L. 98–440.
[9] The enactments of both acts were the results of heavy lobbying efforts by several investment banks. See Ranieri, *supra* note 7, 37-38.
[10] See MBS Handbook, 7-8.
[11] See MBS Handbook, 99.

variable incomes, second house purchase, etc.[12] The line between an Alt A loan and a subprime loan is not always clearly drawn and originators often have more refined categories than the Alt A/subprime dichotomy in the below-prime world.[13]

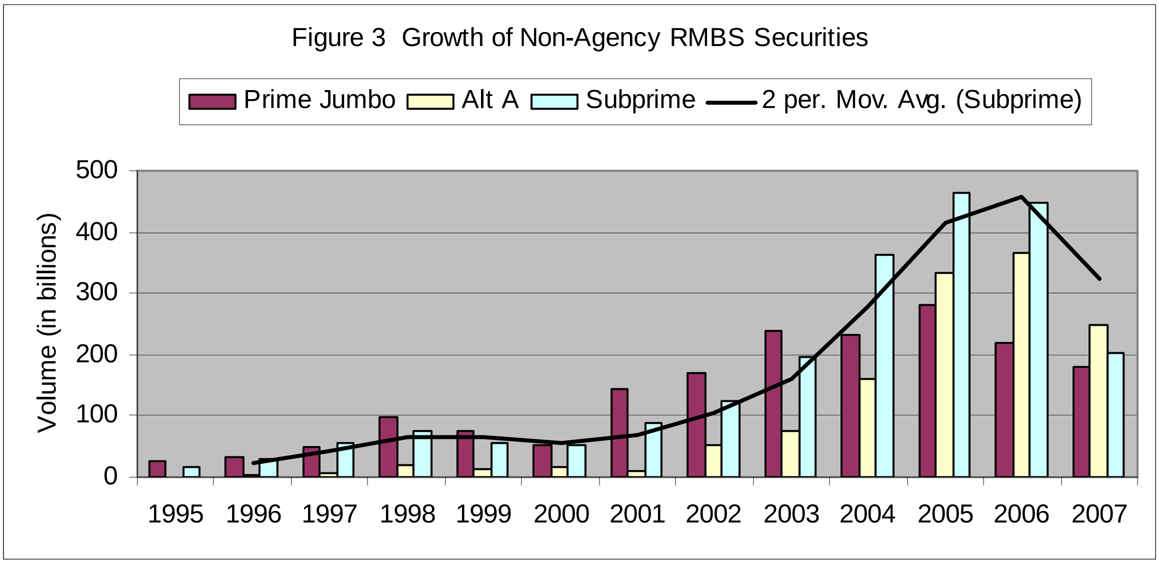

Figure 3 Growth of Non-Agency RMBS Securities

(Source: Inside Mortgage Finance)

D. The Boom and Bust in the Non-Agency Market

In the non-agency market, private issuers pool non-conforming mortgages (e.g. prime jumbo, Alt A or subprime loans) and issue mortgage-backed securities backed by the mortgage pool. These securities are issued as multi-class REMIC securities with a senior/subordinate structure. The subordinate tranches will serve as credit enhancement for the senior tranches. Because of the existence of credit risk, the securities are rated by rating agencies. This may still not be enough. In earlier times, external credit enhancement techniques such as bond insurance were often used.[14]

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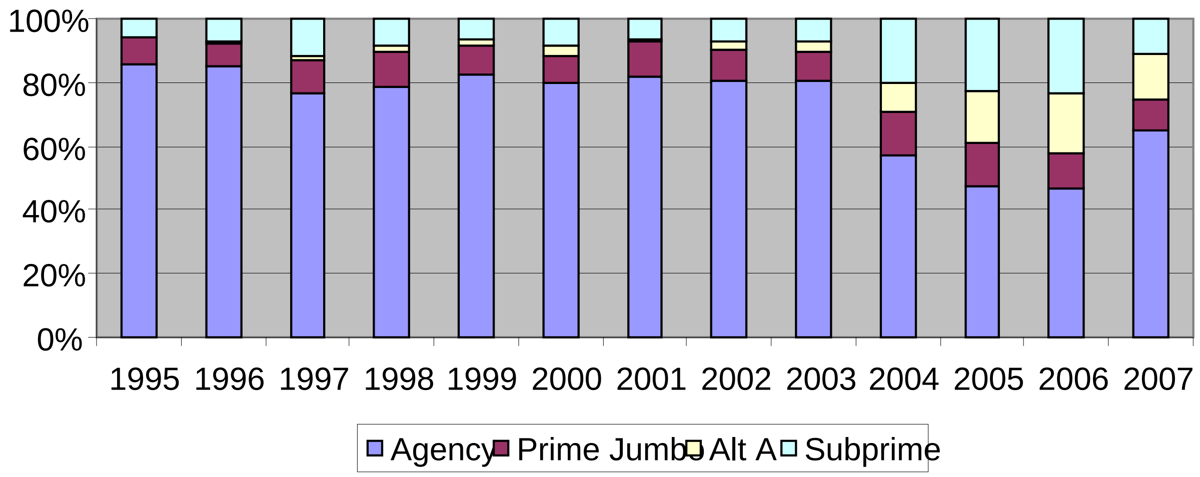
[12] See MBS Handbook, 9. Investment properties are fairly rare in agency and jumbo deals but very common in Alt-A deals, which may have as much as 50% of investment properties but the average percentage is 20%. See MBS Handbook, 99.

[13] For example, one product area consists of loans to borrowers with both impaired credit and les rigorous documentation under the general umbrella of Alt-B. See MBS Handbook, 9.

[14] See Standard & Poor's, U.S. Residential Subprime Mortgage Criteria, http://www2.standardandpoors.com/spf/pdf/fixedincome/RMBSSubprime_092004.pdf, 65 (analyzing the

Until very recently, the non-agency market was quite small compared to the agency market. The GSEs have been vigilant in guarding their dominant status by lowering their underwriting standards and increasing their conforming limits.[15] After a few years of prosperity, the non-agency market almost collapsed in 2000 due to poor performance of the 2000 vintage (i.e. loans originated in 2000) and the temporary liquidity crisis caused by the collapse of Long Term Capital Management.[16] The interest rate cuts in early 2000s saved the industry. The low-interest environment led to massive refinancing of mortgage loans by borrowers and the non-agency RMBS market quickly revived. However, as Figure 4 shows, the agency issuance volume also picked up in 2000 and 2003 at the same pace and the market share of the non-agency issuance remained almost unchanged.

Figure 4 Comparison with Agency Issuance



(Source: Inside Mortgage Finance)

structure of a transaction with bond insurance). See also Adelson & Jacob Consulting, LLC, The Sub-prime Problem: Causes and Lessons, http://www.adelsonandjacob.com/pubs/Sub-prime_Problem-Causes_&_Lessons.pdf, 3 (Claiming that until 1997, the vast majority of home equity MBS had used bond insurances).

[15] See MBS Handbook, 111.
[16] See MBS Handbook, 366. See also, Standard & Poor's, *Subprime Mortgage Lenders Transition In A Stressed Mortgage Cycle*, May 8, 2007.

The real breakthrough came in 2004[17], when the accounting scandals of Fannie Mae and Freddie Mac broke out and they were financially constrained in buying more mortgages.[18] Equipped with excessive liquidity but facing a troubled buyer of their prime mortgages, many traditional prime loan originators significantly expanded their non-conforming loan programs. [19] New players also entered the market. In the ensuing two years, non-agency issuance represented almost 50% of the total RMBS issuance until it was discovered in early 2007 that many subprime mortgages originated in 2006 would quickly default almost immediately after origination.[20] The early payment default shock caused a tightening of loan underwriting standards, which forced many borrowers of adjustable rate mortgages to default once their monthly payments spiked because they could not refinance their mortgages anymore. More defaults caused a decline in housing prices and even more mortgage defaults. Eventually the poor performance of the non-agency RMBS securities caused a total shutdown of the market in the second half of 2007. The market remained effectively closed in 2008 with almost no new securitization activity in the entire year.[21]

[17] The expansion began in the later half of 2003 as there would usually be a few months' gap between a loan's origination and securitization.
[18] See Paul Muolo and Mathew Padilla, CHAIN OF BLAME: HOW WALL STREET CAUSED THE MORTGAGE AND CREDIT CRISIS (John Wiley & Sons, 2008), 185.
[19] For example, Countrywide, once the nation's largest independent mortgage lender, primarily made traditional first-lien home loans to individuals with strong credit until 2003. According to Countrywide staff, there was a significant "culture change" in or about May 2003. The company expanded aggressively into making non-conforming loans ever since. See In re Countrywide Financial Corporation Securities Litigation (filed complaint), 2009 WL 222002 (C.D.Cal.), 25.
[20] See Yuliya Demyanyk and Van Hemert, Otto, *Understanding the Subprime Mortgage Crisis* (August 19, 2008), 1. Available at SSRN: http://ssrn.com/abstract=1020396. (showing the actual delinquency rates for 2001-2007 vintgages) See also, Standard & Poor's, *supra* note 16 (Reporting that many originators did not have sufficient liquidity to fulfill their repurchase obligations).
[21] According to a search in the SEC's EDGAR filing system, only a few prime jumbo loan deals were able to come through in 2008 as the prime jumbo sector was largely insulated from the below-prime sector. Most of the issuances in 2008 were re-securitization transactions under which pieces of existing RMBS securities were pooled and re-securitized.

2. Primary Market: Non-Agency Loan Origination

A. Originate-to-Sell Model

At the inception of the secondary mortgage market, the purpose of securitization was arguably to assist banks to release capital from their vast mortgage holdings. Consequently, the secondary market was supposed to be complementary to the banking system.[22] Over the years, the success of mortgage securitization, especially with the blessings of the GSEs, has transformed the supply and demand relationship between the primary market and the secondary market. It is no longer the case that the secondary market absorbs any surplus that banks are not able to hold with their own balance sheets. Neither is the case that the secondary market buys whatever banks originate. The whole relationship has been reversed. Banks originate mortgage loans because they want to sell them to the secondary market. As marketability of the loans is their primary concern, their origination activities will follow the demand for particular types of loans in the secondary market.

The creation of this originate-to-sell (or more popularly known, originate-to-distribute[23]) model has fundamentally transformed the mortgage business. Perhaps the most important change is that banks are no longer needed to originate the loans. If an originator can quickly sell off the mortgage loans it originates, it does not need deposits to fund its operation. An originator no longer profits from the difference between the interest rate it charges on its loan portfolios and the interest rate it pays on the deposits. Instead, the profit comes from the difference between the proceeds from selling the mortgage loans and the costs for making these loans. Mortgage business becomes not that different from any manufacturing business.

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[22] See Ranieri, *supra* note 7, 32.

[23] This paper prefers using "originate-to-sell" because "originate-to-distribute" seems to suggest that the originator securitizes the loans and "distributes" the securities. As shown in this paper, more often than not, originators sell their loans to other bigger originators or sponsors as whole loans rather than securitizing them.

Appendix 1 lists the top 20 originators in each major category of the non-agency market for the year 2007. Although most of the companies on the lists have been on the top list for the past few years, their relative ranking in 2007 may not be representative of the past years because all loan originators have significantly reduced their origination volume since the second half of 2007. Many companies on the list have already been bankrupt or closed and those left have either virtually shut down their operations or have switched to originating prime mortgage loans or FHA/VA mortgage loans. FHA/VA mortgage loans are loans extended to qualified low and medium-income families. These loans will be guaranteed and securitized by Ginnie Mae, which is an entity explicitly backed by the full faith and credit of the US government.[24]

Many originators on the top list are not banks. In particular, most of the originators of subprime loans are not traditional bank lenders while there are a higher percentage of commercial banks on the prime jumbo originator list. Large bank originators may choose to retain some loan portfolios and securitize the rest while non-bank lenders virtually sell all their loan portfolios because they do not have a depository base to carry them.[25] Some originators are owned by investment banks as a result of acquisition during the boom years. Although some are savings banks or affiliates of banks, their operations are not primarily funded by deposits. For example, HSBC Finance is a consumer finance company acquired by HSBC years ago and is financed through debt offering and borrowing.[26] Countrywide, once the largest independent mortgage lender in the United States before it was acquired by Bank of America, used to be largely funded by borrowings, too.[27]

[24] See *supra* note 3.
[25] See MBS Handbook, 16.
[26] See annual reports of HSBC Finance.
[27] See, for example, 2006 annual report of Countrywide.

B. Financing for Non-Bank Originators

The financing of a non-bank mortgage business is not different from the financing of a manufacturing business. The primary financing need is short-term in nature: an originator needs to fund the mortgage loans during the period between origination and sale. Large sophisticated originators have access to the capital market for such financing needs. They may issue short-term notes or enter into securities repurchase arrangements. One important source of funding in the capital market is the issuance of asset-backed commercial papers. An issuer will set up an SPV and inject mortgages into the SPV. Backed by the mortgages, the SPV will issue asset backed commercial papers ("ABCPs"). The mortgages are sold off periodically and the commercial papers are either repaid or extended for another term.[28]

For originators that do not have ready access to the capital market, borrowings from warehouse lenders satisfy their short-term financing needs. An originator may set up several revolving facilities with warehouse lenders. A popular approach is to enter into a repurchase arrangement with the lender under which the originator sells the mortgage loans it originates to the lender according to a pre-determined pricing mechanism. The originator at the same time promises to repurchase the mortgage loans back from the lender after a certain period of time (e.g. 90 days). The lender acts as a "warehouse" for the loans before they are sold or securitized. The primary purpose of entering into a repurchase arrangement instead of a secured lending arrangement is to avoid bankruptcy risk. Although the Uniform Commercial Code will typically re-characterize a repurchase arrangement as a secured lending arrangement,[29] the industry believes that this particular type of arrangement is protected by a special treatment clause under federal bankruptcy laws.[30]

[28] See Moody's, *Moody's Approach to Rating Single Seller Mortgage Warehouse Structures*, January 5, 2005.
[29] U.C.C. § 9-109(a)(1).
[30] See Brief of the Securities Industry and Financial Markets Association, In re American Home Mortgage Holdings, Inc., et. al., http://www.sifma.org/regulatory/briefs/2007/AmHomevCSFB.pdf.

This type of warehouse lending is considered by many lenders to be a safe business because the collateral for the loan is highly marketable mortgages. Warehouse lenders also protect themselves through various contractual arrangements. If a mortgage loan is found to have documentation deficiencies, the lender may resell the loan back to the originator immediately. If a mortgage loan defaults, the lender is also entitled to dump the loan back to the originator.

The failure by non-bank originators to sustain their short-term financing channels was the direct reason why many non-bank originators failed. During the credit crisis, the entire ABCP market was also shut down. As the default rate increased, warehouse lenders became concerned about their collateral and cancelled their warehouse facilities to originators. At the same time, they resold defaulted mortgages back to originators. Facing with mounting repurchase requests and little demand for their mortgage loans from the secondary market, originators have only one choice – bankruptcy.

Figure 5 Failure of Mortgage-Related Companies

Year	Failed	Acquired
2009	51	11
2008	120	37
2007	160	43
2006	27	20
2005	9	7
2004	9	8
2003	11	5

(Source: www.mortgagegraveyard.com)

C. Mortgage Brokerage and Correspondent Lending

Large originators dominate all three sectors of the non-agency market. However, they are not "originators" in the usual sense. One survey of all mortgage loans originated in 2007 (including both prime loans and non-prime loans) suggests that 28.2% of the loans were originated through mortgage brokers, 28.6% through correspondent lending relationships and only 43.1% through the originators' own retail channels.[31] Another survey in 2007 claimed

[31] See THE MORTGAGE MARKET STATISTICAL ANNUAL 2008 (Financial World Publications, 2008).

that 58% of US residential mortgage loans originated in 2006 were through mortgage brokers.[32] The percentage of brokered loans and correspondent loans in the non-agency market is not available but is believed to be much higher than those sold to the agency market. During the height of non-agency RMBS market, some subprime lenders even shut down their entire retail lending channels and operated exclusively on a wholesale basis.[33]

Lightly regulated at the state level, mortgage brokers often claim that they enjoy the status of independent contractor and act as the information conduit between lenders and borrowers.[34] A mortgage originator maintains relationships with thousands of independent brokers across the country. Brokers solicit borrowers and collect the information required for loan approval such as borrowers' FICO scores, income information and property appraisal reports. They then submit the loan application package (often over the internet) to one of the mortgage originators they conduct business with for approval. Funding will be provided once the loan is approved.

Correspondent lending is for small lenders to participate in the mortgage origination business. A small lender establishes a correspondent lending relationship with a large lender and from time to time sells its loan portfolios to the latter. The small lender will utilize the same underwriting standards of the buyer. The buyer will implement various quality control measures such as periodical review of lending process of the seller and complete re-underwriting of a portion of the purchased loans.

The engagement of mortgage brokers and correspondent lenders provides obvious benefits for the originators. The mortgage pool backing an RMBS issuance always consists of

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[32] See Wholesale Access, *Handout from the 2007 MBA Convention*, http://66.225.31.160/wp-content/uploads/file/wac_final.pdf.

[33] See 2006 annual report of New Century Financial Corporation, available through the SEC EDGAR filing system.

[34] For example, Massachusetts' mortgage broker licensing law clearly provides that mortgage brokers are independent contractors but not agents of either the borrower or the lender. 209 CMR 42.16. See also Harry Dinham, Prepared Testimony on "Preserving the American Dream: Predatory Lending Practices and Home Foreclosures" Before the Committee on Banking, Housing and Urban Affairs, U.S. Senate, http://www.fambpalmbeach.com/GovAffairs/dinham%20testimony.pdf, appendix 1.

mortgages from different regions of the country due to requirement for geographic diversification. Without mortgage brokers and correspondent lenders, mortgage originators will have to maintain a national operation, which is only feasible for a few national players. Second, mortgage brokers are like employees of the originator paid on a commission basis. The originator could keep their overhead cost at a low level since there is no cost if a broker does not generate loan deals.[35] Third, an originator could easily expand its business and increase its production volume by signing up with more brokers and correspondent lenders, who are always willing to do business with anyone that wants to buy their mortgage loans.

3. Secondary Market: Non-Agency Mortgage Securitization

In the non-agency market, after a pool of mortgage loans are identified, they are converted into securities through securitization and sold to secondary market investors. Unlike the issuance of GSE-sponsored mortgage-backed securities, the issuance of non-agency mortgage-backed securities is not exempted from the Securities Act of 1933.[36] Because of securities law requirements and practical concerns, actual securitization in the non-agency market is more complicated than the simplified model presented at the beginning of this part. This section explains three fundamental aspects of the actual securitization process, including the use of a depositor arrangement to satisfy shelf registration requirements, separation of loan origination and securitization and the use of contractual representations and warranties by transaction parties.

[35] See Muolo and Padilla, *supra* note 18, 183.

[36] Securities Act of 1933, § 3(a)(2). It should be noted that GSEs are no longer completely exempted from federal securities laws. For example, Section 1112 of the Housing and Economic Recovery Act of 2008 (15 U.S.C. 7800) amends the Securities Exchange Act of 1934 to repeal the exemptions from certain provisions of the '34 Act for GSEs. For an analysis of the securities status of asset-backed securities, see Tamar Frankel & Ann Taylor Schwing (editor), SECURITIZATION: STRUCTURED FINANCING, FINANCIAL ASSET POOLS, AND ASSET-BACKED SECURITIES, 2nd ed., (Fathom Publishing Company 2005), Vol. 2, 7-22.

A. Issuance Types

Appendix 2 sets out a breakdown of the transaction number, volume and percentage of each asset type in the non-agency RMBS market since 2001. Apart from prime jumbo, Alt A, and subprime loans, another two types of mortgages are routinely securitized in this market although their market shares are much smaller. "Scratch and dent" loans, as the name indicates, are loans that have certain deficiencies such as unusual loan terms, missing documentation and first payment defaults.[37] Their performance is usually more difficult to predict and require special pricing and servicing techniques. HELOC is short for "home equity line of credit", which is typically an open-ended revolving facility extended to borrowers that want to tap into their home equities. A HELOC loan is secured by a second mortgage on the property. A HELOC loan is different from a HEL loan, which is short for "home equity loan". The latter is actually a term often used to describe below-prime loans in general because historically most mortgages loans securitized in the non-agency market were home equity loans secured by a secondary mortgage. Although most mortgages in the non-agency market now are first mortgages, the term nevertheless stays. [38]

With the exception of scratch and dent loans, most non-agency mortgage-backed securities have been issued in the public market by filing of a registration statement with the SEC under the Securities Act of 1933. Private issuance under Rule 144A has been of minimum amount for most of the time except for the year 2007, when issuers of subprime and HELOC RMBS securities seemed to turn to the private market for purchasers when the public market was dried up. With regard to scratch and dent loans, their various deficiencies often make it difficult to collect all the necessary information required to be disclosed for a public offering. In addition, the SEC has for a long time held the position that an "asset

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[37] See Scott Olson and Heather Moulder, *Scratch and Dent Mortgage Loans: What an Investor Needs to Know*, The Journal of Structured Finance, Winter 2005, 81-84, 81.
[38] See MBS Handbook, 365.

backed securities facility" should not be backed by a pool of assets with delinquencies of more than 20% at the proposed offering, nor should an ABS asset pool have any non-performing assets at the proposed offering.[39] Such a view has been codified in the corresponding SEC regulations.[40] These restrictions further bar many scratch and dent loans from being securitized through the public offering channel.

Appendix 2 further categorizes private market transactions into NIM transactions and Non-NIM transactions. NIM stands for "net interest margin", which is a term used by banks to describe the difference between their lending proceeds and borrowing costs. NIM securities are securities backed by the residual interests retained by RMBS issuers (usually the unrated residual part at the bottom) in their previous securitization deals. They are called NIM securities because the excess spread component of a MBS residual part is similar to the "net interest margin" reported by financial institutions. NIM securities are frequently insured by a mortgage insurer because their performance is particularly hard to calculate by ordinary investors. NIM transactions are particularly popular in subprime transactions and issuers routinely execute an NIM transaction alongside a regular RMBS issuance to sell off their retained residual interests. [41]

B. Depositor

Figure 6 and Figure 7 below illustrate the two basic structures for mortgage-backed securities publicly issued in the non-agency market. The three basic players in a securitization transaction are originators, sponsors and underwriters. Originators originate mortgage loans.

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[39] See SEC, Asset-Backed Securities; Final Rule, Fed. Reg. Vol. 70, No. 5, 1506-1631, 1517. According to the SEC, the reason for the restriction is that in either case the assets are not performing in accordance with their terms and management or other action may be needed to convert them to cash. Therefore such assets may no longer be (and in the case of non-performing assets, are not) converting into cash within a finite time period, as required by the definition of asset-backed security. Non-performing assets are defined under Regulation AB as financial assets that should be charged off. Delinquent assets are assets on which any portion of a contractually required payment is 30 days or more past due.

[40] C.F.R. § 229.1101(c)(2).

[41] See Adelson & Jacob Consulting, Home Equity ABS Basics, http://www.adelsonandjacob.com/pubs/Home_Equity_ABS_Basics.pdf, 12-13.

Sponsors put up a mortgage pool for securitization. Underwriters sell the mortgage-backed securities. Once a mortgage pool is identified and the securities backed by such pool are issued, the pool will be closed and no new mortgage loans will be added thereafter. The revolving trust structure, under which new assets are injected into the trust after old assets retire, is not used in the RMBS market.

In an originator transaction (Figure 6), a loan originator assigns a pool of mortgages it originates to a depositor, which for most of the times, is an affiliate of the originator. Here the originator is also the sponsor of the transaction. After receiving the mortgage pool, the depositor immediately deposits the pool with a special purpose vehicle it sets up on a back-to-back transaction. In the public issuance market, the special purpose vehicle is most likely to be a common law trust established in New York. The trust is governed by a pooling and servicing agreement ("PSA") to which the trustee, the depositor, and the master servicer are all parties. Originator transactions are typically conducted by large players such as Countrywide, Indymac and Washington Mutual.

Mortgage-backed securities will be issued pursuant to the provisions of the PSA. The PSA will also be the governing document for all post-securitization activities including servicing of the mortgage loans, monthly payments to certificate holders and trustees' obligations. Depending on the transaction structure, the sponsor may make certain representations and warranties about the mortgage loan pool directly to the issuing trust under the PSA (if it is a party to the PSA), or the rights of the depositor under the sales and purchase contract between the sponsor and the depositor will be assigned to the issuing trust under the PSA (if the sponsor is not a party to the PSA). The securities issued by the trust will be distributed by underwriters, just like stocks and bonds.

An aggregator transaction is different from an originator transaction in that originators do not securitize their own loans. Rather they sell their loans to a sponsor. The sponsor aggregates the loans from multiple originators and assigns the combined mortgage pool to an affiliated depositor.[42] As the sponsor in an aggregator transaction is usually an affiliate of an investment bank, the specific transaction is almost certainly underwritten by the investment bank affiliate either exclusively or as a lead underwriter. The business of aggregating mortgage loans from multiple originators for securitization is referred to as "principal finance" (or "conduit business").[43]

Figure 6 Originator Transactions

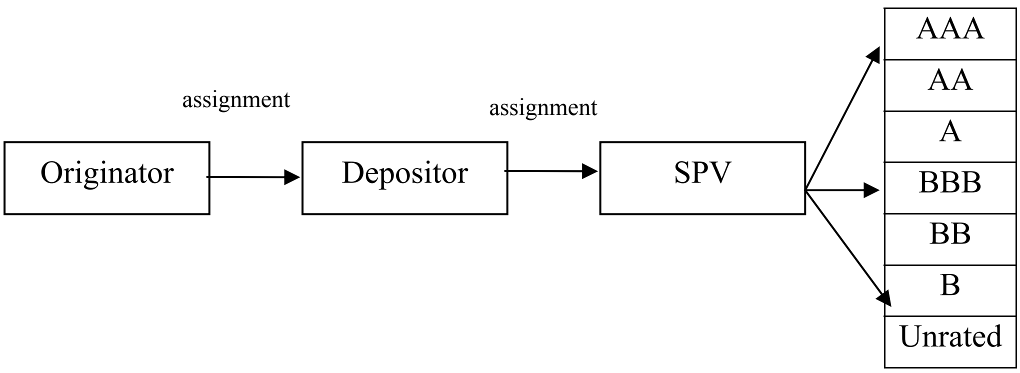
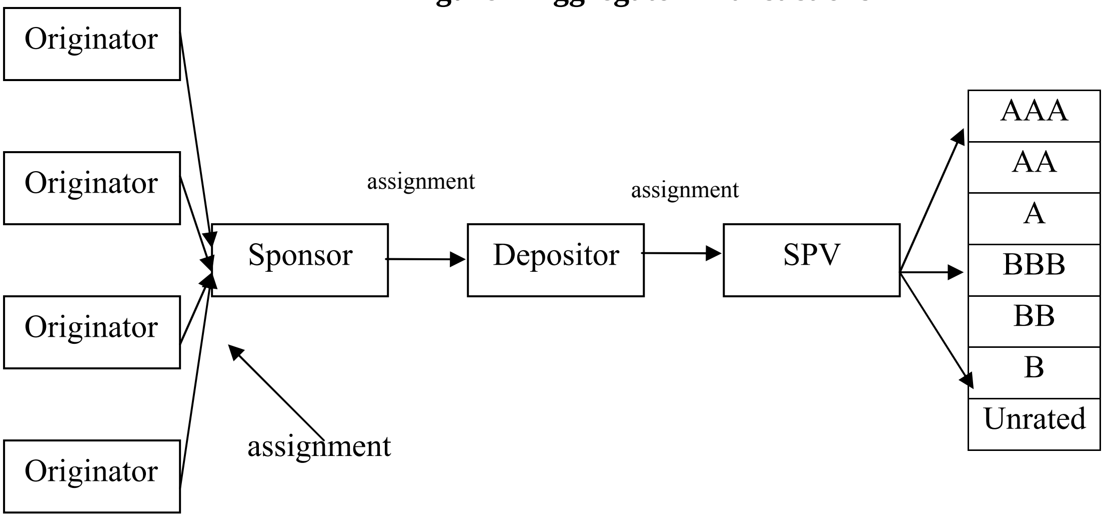


Figure 7 Aggregator Transactions



Neither the SEC nor any academic work on asset securitization has explained why an SPV-like depositor would be used in securitization transactions. It seems that the engagement

[42] For a description of the making of one specific deal, see Allan Sloan, *supra* note 1.
[43] See JPMorganChase, Re: Asset-Backed Securities Release Nos 33-8419 and 34049644 File No. S7-21-04, http://www.sec.gov/rules/proposed/s72104/russo071204.pdf, 5.

of a depositor could not be explained from an economic/business perspective. The rationale the author could think of is largely a legal one. To publicly issue mortgage-backed securities, an issuer is required to file a registration statement in accordance with the Securities Act of 1933. The default form is the S-1 form. However, the preparation of the S-1 form takes time and attracts scrutiny from the SEC. The issuer also faces various marketing constraints. Naturally the better solution is to be able to offer these securities on a continuous offering basis.

In connection with the enactment of the Secondary Mortgage Market Enhancement Act of 1984 ("SMMEA"), the SEC permitted SMMEA-eligible securities (including all RMBS securities) to be offered on a shelf registration basis.[44] The availability of the S-3 form could significantly reduce the registration time needed for a securitization transaction but it creates a new problem. An operating company (e.g. an originator) registering a shelf would mean that the company must fulfill all the periodic disclosure requirements and other securities law obligations. The requirements in effect amount to an offering of debt/equity securities by the company itself.

The solution is to use a depositor company as a buffer between the sponsor and the special purpose vehicle. A depositor company files a registration statement with the SEC for offering securities on a continuous basis and maintains the effectiveness of the registration by filing periodical updates. When a mortgage pool is identified for securitization, it could quickly issue RMBS securities backed by such mortgage pool through a shelf takedown offering with the filing of a prospectus supplement. The company derives its name from the Securities Act of 1933, under which the entity depositing the assets with the trust is called a "depositor" and is deemed to be the issuer of the securities, although technically it is the trust

[44] 17 C.F.R. 230.415(a)(vii). For the SEC's explanation on the permission, see SEC, Shelf Registration, 48 F.R. 52889.

that issues the mortgage-backed securities.[45] Depositor companies only have minimum assets and their activities are usually limited to maintaining the effectiveness of the shelf registration. As a shelf takedown transaction can be done rather quickly, the investment bank could potentially price the mortgage pool and the mortgage-backed securities to be issued at the same time without having to pre-purchase the mortgage pool.[46]

Depositor companies are usually affiliates of sponsors. Based on the author's own survey, all RMBS securities issued in 2006 and 2007 were on a shelf registration basis and all utilized a special purpose company as the depositor of the transaction. Transactions in which the sponsor is not an affiliate of the depositor are rare in the non-agency market, accounting for only 14 issuances in 2006 (out of 1202 transactions) and 21 issuances in 2007 (out of 772 transactions) of all publicly issued RMBS securities based on the author's own calculation. These transactions are called as "rent-a-shelf" transactions and are conducted by securitizers that do not maintain their own shelf registrations and "borrow" the shelves maintained by the securities underwriters.[47]

Many securitization sponsors have multiple depositors specializing in the securitization of certain asset types. For example, when Countrywide issues RMBS securities, Countrywide Home Loans Inc., acting as the sponsor of the deal, will transfer the mortgage pool to one of its wholly-owned depositors, CWMBS, Inc (in case of a prime jumbo issuance), CWALT, Inc.(Alt A issuance), CWABS, Inc. (subprime issuance) or CWHEQ, Inc. (HELOC issuance). In 2006, about seventy depositors were involved in the issuance of RMBS securities in the non-agency market. The top twenty "shelf owners" represent about 90% of the issuance volume.

Figure 8 2006 Non-Agency Public RMBS Issuance By Shelf

Shelf Owner	Depositor	Deal No.	Volume	Percentage

[45] Securities Act of 1993, 2(a)(4).
[46] See SEC, *supra* note 44, 52891.
[47] See SEC, *supra* note 39, 1534.

	Number			
Countrywide	4	166	$143,070.18	13.77%
Lehman	1	86	$89,797.78	8.64%
Residential Funding Company	5	112	$71,949.93	6.92%
Bear Stearns	2	80	$71,508.56	6.88%
RBS	2	42	$53,300.38	5.13%
Goldman Sachs	1	59	$53,106.52	5.11%
Wells Fargo	1	41	$47,156.97	4.54%
JP Morgan	2	47	$45,793.38	4.41%
Washington Mutual	1	43	$40,088.15	3.86%
Morgan Stanley	2	37	$39,797.41	3.83%
Indymac	2	59	$38,280.52	3.68%
Credit Suisse	3	41	$35,135.71	3.38%
Merrill Lynch	1	49	$34,730.62	3.34%
Deutsche Bank	2	39	$31,517.35	3.03%
Citigroup	3	41	$31,408.38	3.02%
Bank of America	3	38	$28,580.41	2.75%
Long Beach	1	15	$25,687.96	2.47%
HSBC	3	18	$20,168.11	1.94%
UBS	1	29	$19,877.62	1.91%
Ameriquest	2	10	$17,007.56	1.64%

(Source: SEC filings, author's own calculation)

C. Analysis of Transaction Type Data

(1) Classification of Transactions

In the non-agency market, the relationships between parties conducting loan origination, transaction sponsoring and securities underwriting deserve a closer look. Appendix 3 divides non-agency transactions into eight categories based on such relationship differences. The fundamental difference between Type A transactions and Type B transactions is whether the lead underwriter of the securitization transaction is an affiliate of the sponsor. The definition of affiliation for this paper is more stringent that that under the accounting rules. Only subsidiaries within one financial group are considered to be affiliates. It should also be noted that RMBS issuances, especially when the sponsor is not the affiliate of the underwriter (i.e. Type B transactions), typically employ an underwriting syndicate within which one underwriter will lead the underwriting efforts. Only lead underwriter is considered here as it is primarily responsible for the preparation of issuance documents.

Each major type of transaction (i.e. A or B) is further divided into four sub-categories (A-1 to A-4, B-1 to B-4), depending on the relationship between the sponsor and the originator. As issuers of RMBS securities are only required to disclose the identities of originators contributing more than 10% of the mortgage loans in the mortgage pool, a transaction involving an affiliated originator of the sponsor will only be identified to the extent that it is so disclosed in the disclosing documents. At last, for each transaction type, Appendix 3 further splits the transaction volume in three ways depending on whether the sponsor of the transaction is a commercial bank, an investment bank or a non-bank lender. Top five transaction modes (out of twenty-four modes in total) for each asset category are highlighted.

Figure 9 2006-2007 Public Non-Agency RMBS Issuance By Transaction Type

	2006			2007		
	Prime	Alt A	Subprime	Prime	Alt A	Subprime
A-1	17.84%	2.95%	14.70%	27.73%	5.02%	22.20%
A-2	22.88%	22.73%	5.28%	22.20%	27.89%	14.26%
A-3	2.59%	13.97%	34.38%	1.77%	6.29%	19.08%
A-4	14.98%	25.15%	16.30%	8.57%	25.53%	19.90%
B-1	12.47%	24.68%	18.70%	13.96%	22.98%	12.66%
B-2	27.59%	9.00%	2.70%	23.58%	10.31%	3.01%
B-3	0.47%	0.16%	4.29%	0.00%	0.00%	3.56%
B-4	1.17%	1.36%	3.64%	2.19%	1.98%	5.32%
Type A Transactions in Total	58.29%	64.80%	70.67%	60.27%	64.73%	75.44%
Classic Model (A-1+B-1)	30.32%	27.64%	33.41%	41.69%	28.01%	34.86%
Expanded Classic Model	80.79%	59.36%	41.38%	87.47%	66.20%	52.14%
Single Originator Ratio	33.37%	41.77%	72.08%	43.46%	34.30%	57.51%

(Source: SEC filings, author's own calculation)

(2) Uncontested Issuances

Figure 9 is a summary of Appendix 3 data. It can be seen that the combined volume of Type A transactions is unusually high across all asset categories. The highest ratio is in the subprime sector, in which more than 70% of the transactions in 2006 and 2007 are Type A transactions. A Type A transactions in this paper is defined as a transaction in which the sponsor is an affiliate of the lead underwriter. The loans to be securitized may come from sources ranging from the sponsor itself (Type A-1) to multiple unaffiliated sponsors (Type A-

4). The significance of Type A transactions is that the issuer (technically the depositor, an affiliate of the sponsor) is on the same side with the underwriter. In a typical securities issuance, an underwriter has an obligation to diligently investigate into the accuracy and sufficiency of the information disclosed in the prospectus. It is supposed to guard the gate to the capital market and refuse to underwrite deals that do not pass their smell tests. The exact same obligation applies to underwriters in Type A transactions but the fundamental difference is that the issuer of the securities and the underwriter belong to the same financial conglomerate.

(3) Separation of Origination and Securitization

The transaction type data shows that there is a clear separation between the origination function and the securitization function, which means that loan originators do not necessarily securitize their own loans. In terms of transaction volume, the classic originate-to-securitize model under which one originator securitizes its self-originated mortgage loans (i.e. Type A-1 and Type B-1 transactions) accounts for roughly only one third of the transaction volume across all asset categories in 2006 and 2007. Indeed, the majority of the transactions involve the sponsor buying at least some mortgages from unaffiliated originators. Note that the fact that a mortgage pool is originated by one originator does not mean that the originator originates all loans through retail channels. Rather it should be expected that a large portion of the loans will be originated through mortgage brokers or purchased from correspondent lenders. However, if a mortgage pool is originated by one originator, it generally means that one set of underwriting standards is applied. If a mortgage pool is said to be originated by multiple originators, different underwriting standards are used.

Expanding the classic model to include A-2 and B-2 type transactions, i.e. transactions involving some self-originated loans and some loans purchased from unaffiliated originators, the ratios of transactions under the expanded model increase significantly for prime jumbo transactions (81% in 2006 and 87% in 2007). The ratio for Alt A transactions increases to 59% and 66% in 2006 and 2007 respectively while the ratio for subprime transactions still remains relatively low – 41% in 2006 and 52% in 2007. This means that in about half of the subprime RMBS issuances in these two years, the sponsor of the securities issuance or its affiliates[48] do not originate any of the mortgage loans to be securitized.

The breakdown in Appendix 3 clearly shows that investment banks play an important role in separating the origination function from the securitization function. Type A-3 and Type A-4 transactions conducted by investment banks, which are transactions in which investment banks buy a pool of mortgages from one (Type A-3) or multiple unaffiliated originators (Type A-4), account for about 39.5% of the total subprime issuance in 2006. The figure is 33.8% for Alt-A transactions and 11.4% for prime jumbo transactions. As a matter of fact, investment banks should account for an even higher ratio. Appendix 3 makes rather an arbitrary division between commercial banks and investment banks by deeming large players such as Citibank, Bank of America and JPMorgan as commercial banks. In effect when they conduct Type A-3 and Type A-4 transactions, the sponsors are likely to be their investment banking arms.

(4) Explanation for Separation – The Need for Aggregation

Why would an originator sell its loan portfolios to others instead of securitizing them itself? One factor at play seems to be the mortgage pool size required for a successful securitization.[49] When a pool grows larger, the law of large numbers is more likely to apply and the prediction on the performance of the mortgage pool can be more statistically accurate. Rating agencies have for a long time factored pool size into their rating considerations. [50]

[48] Note that an issuer of RMBS securities by law is always the depositor of the transaction, which is a separate entity from the sponsor but is usually an affiliate of the sponsor.
[49] See Mark Korell, *The Workings of Private Mortgage Bankers and Securitization Conduits* in A PRIMER ON SECURITIZATION (Leon T. Kendall & Michael J. Fishman eds., 2000), 96-97.
[50] In its 2003 report, Moody's states: "Pool size plays an important role in shaping the pool loss distribution. The smaller the pool, the less certain we can be that the outcome will fall within a tight band around our

From an issuer's perspective, a bigger deal is more cost-effective because many transaction costs, e.g. legal and printing fees, are fixed. Structuring techniques also favor large mortgage pools. A common credit enhancement measure is cross-collateralization, which requires the mortgage pool to be divided into several sub-pools. Each sub-pool supports a certain amount of securities on its own while the excess cash flow of each sub-pool is then combined to support the issuance of a new class of securities. As Figure 10 shows, the average size of a public RMBS issuance has grown considerably over the past few years in all three asset categories. Subprime deals are general larger than prime jumbo deals and Alt-A deals and billion-dollar transactions were the norm in the boom years between 2004 and 2006.

One the other hand, mortgage loans cannot wait too long to be securitized. One concern of course is that originators must sell those stinky mortgage loans before the borrowers become default. However, there are other legitimate concerns. A few months after origination, situations may change and original information collected about the mortgage loans, such as the borrower's FICO score, income level and the appraisal value of the property may no longer be meaningful. Once a loan is treated as a "seasoned loan", an information update and a re-evaluation become necessary, which inevitably increase the origination costs.[51] Most non-bank originators also could not afford the carrying cost since they borrow heavily on a short-term basis.

Eventually under the originate-to-sell model, it is critical for mortgage originators to quickly dispose of their mortgage loans so that they could re-use the money. According to the author's own survey, it is common for an RMBS issuance backed by a mortgage pool with a weighted average seasoning of zero to three months only. Direct securitization is often not a practical option for none but only a handful of very large originators. As one manager puts it:

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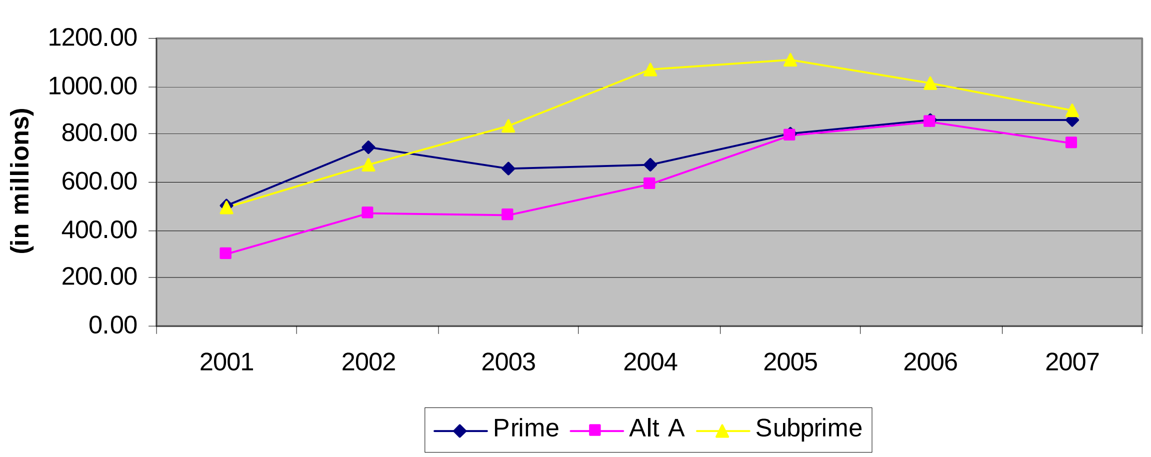
expectations." Moody's, *Moody's Mortgage Metrics: A Model Analysis of Residential Mortgage Pools*, April 1, 2003, 10.

[51] For example, S&P defines a seasoned loan as a loan that has been in a portfolio for more than nine months. See Standard & Poor's, *supra* note 14, 14.

"…there is no place in the ABS market for small and medium-sized issuers. They should be more conservative than their larger competitors because they are less diversified."[52]

Figure 10 Average Size of a Public RMBS Issuance



(Source: Inside Mortgage Finance, author's own calculations)

(5) Explanation for Separation – Other Factors

The practical need for very large financiers to step in and serve as a super aggregator is one reason for investment banks to set up the so-called "mortgage conduit programs", or prime finance business, to collect small loan portfolios and aggregate them for securitization. However, this alone does not explain the transaction volume data. To start with, many large originators mix their own mortgage loans with loans from unaffiliated originators before they securitize (i.e. A-2 and B-2 transactions). As a matter of fact, one of the largest originators, Wells Fargo, routinely securitizes its prime jumbo loans together with loans from unaffiliated originators. One possible explanation might be that their business is geographically constrained but their loan pool needs to be well diversified geographically. Another explanation might be that these unaffiliated originators are really just large correspondent lenders that use their own standards to originate loans.

[52] See Nomura, *ABS Gold Coast Report: Coverage of Selected Sessions of ABS East 2003*, http://www.adelsonandjacob.com/pubs/ABS_East_2003_Notes.pdf, 10.

Another phenomenon that cannot be explained is why there are a large number of Type A-3 transactions, especially in the subprime sector. In a Type A-3 transaction, an investment bank/commercial bank purchases a pool of mortgages from a single unaffiliated originator and then securitizes the mortgage pool in the secondary market. Figure 11 and Figure 12 list the top 10 originators for Type A-3 transactions in 2006 and 2007 respectively. Most of the originators on the list are large originators and do not have to sell their mortgage pools to aggregators. Some of these originators are also significant issuers of mortgage-backed securities. Why would they choose to sell a pool of mortgages when the option to securitize is also available? Looking at the buy side of the whole loan trading market, the corresponding question is this: why do investment banks want to purchase mortgage pools, apart from servicing small originators, from large originators?

[53]

Figure 11 Top 10 Originators For Type A-3 Transactions In 2006			
Originator	Total Mortgage Pool Size	%	Deal No.
First Franklin	26.17 (billion)	13%	21
New Century	24.92	12%	26
Countrywide	21.87	11%	16
WMC Corp.	20.90	10%	18
Wells Fargo	19.92	10%	19
GreenPoint	17.07	9%	15
Fremont	16.16	8%	18
Option One	14.31	7%	14
Mortgage Lenders Network	6.62	3%	10
ResMae	4.32	2%	6
Top 10 Total	172.25	86%	163
A-3 Transaction Total	200.77	100%	200

(Source: SEC filings, author's own calculations)

Figure 12 Top 10 Originator For Type A-3 Transactions in 2007			
Originator	Total Mortgage Pool Size	%	Deal No.
New Century	11.87 (billion)	22%	11
Wells Fargo	7.32	14%	11
Countrywide	6.04	11%	6
WMC Corp.	5.38	10%	5
Option One	4.97	9%	5
GreenPoint	3.22	6%	4

[53] First Franklin does not appear in the 2007 list because it was acquired by Merrill Lynch in early 2007 so all First Franklin deals have been counted as Type A-1 transactions, which partly explains why there is a seemingly drop in volume of Type A-3 transactions and an increase in volume of Type A-1 transactions.

Fremont	2.28	4%	3
American Home Mortgage	2.24	4%	2
Accredited Home Lenders	1.88	3%	2
Suntrust	1.82	3%	3
Top Ten Total	47.08	88%	52
Grand Total	53.77	100%	65

(Source: SEC filing, author's own calculations)

One explanation seems to be that competition for underwriting business has reduced the profits from traditional underwriting business. Most of the commercial bank originators in this market have investment banking affiliates that could underwrite RMBS deals in house. The only few large originators that still need assistance from investment banks, such as Countrywide, Indymac, GMAC-RFC and Wells Fargo, conduct business with many rather than only a few of the investment banks. For example, Countrywide used to utilize the services of every investment bank available in the market when issuing mortgage-backed securities. Investment banks had to compete with each other for underwriting business from a few clients and these clients were also building their own underwriting capacities.

Another important reason might have to do with the nature of mortgage-backed securities, or structured finance products in general. Structurers do not structure a transaction randomly. Investors often tell structurers the attributes of the securities they want to buy, such as rating, maturity and coupon rate, and structurers in turn build these specific securities for them. Having control of a large pool of mortgages could give the structurers maximum freedom in meeting clients' needs. Actually early pioneers Bear Stearns and Lehman Brothers established their own mortgage origination business long time ago. Many others followed suit and acquired independent mortgage originators to boost their supply.

Investment banks compete with each other for mortgage loans, in particular Alt A and subprime loans that produce higher yields, and as a result, it might be better for an originator to sell in the whole loan trading market rather than securitize in the secondary market.

One obvious benefit is that investment banks could lend their reputational capital to mortgage originators by purchasing mortgage pools and securitizing them instead of acting merely as underwriters. Investors may have more confidence in the securities if they know that an investment bank must have screened the mortgages before it purchases them with its *own* money before it is willing to make a long list of representations and warranties discussed below.. This might also explain why most of Type A-3 and Type A-4 transactions occur in the subprime and Alt A sector but rarely in the prime jumbo sector.

A second benefit is that an originator does not have to retain any interest in the mortgage pool but if it securitizes the pool, it has to hold or find a way to dispose of the unrated tranche at the bottom. A third benefit is that an originator does not need to worry about securities litigation risks as it is not part of the issuance transaction.

At last, an originator may have access to cheaper financing if it sells the mortgage loans. During the height of the market, it was reported that investment banks would lure mortgage originators to sell mortgage loans to them by extending warehouse credit lines at very low rates.[54] Investment banks would not make any money out of the warehouse lending business but their whole loan trading business would benefit from increased mortgage purchase volume from the borrowing originators.

D. The Role of Representations and Warranties in RMBS Transactions

In an RMBS transaction, investors usually do not have direct access to the mortgage loan files, i.e. loan application forms, property appraisal forms, and credit reports relating to each mortgage loan, for reasons such as protection of privacy of mortgage borrowers. Information is disclosed to them through a prospectus, which contains *representations* from the issuer (and endorsed by others such as the underwriter) about certain aspects of the

[54] See Muolo and Padilla, *supra* note 18, 190.

mortgage pool. If there is a material misrepresentation or omission of a material fact, investors can demand remedies under federal securities laws.

However, not every piece of information is delivered in this way. For example, investors inevitably want to know that all the mortgage loans they are about to purchase are legally enforceable. One probably will never find any representation about the legality of the mortgage loan agreements in any RMBS prospectus. Rather, such representation is made by the sponsor in the sale and purchase agreement between the sponsor and the depositor. The prospectus will point out the fact that the *sponsor makes a representation that all mortgage loans are legal, valid and enforceable in the sale and purchase agreement*.

The extent of these representations and warranties varies from transaction to transaction but the purpose of these representations and warranties is clear – essentially all non-credit related risks should be retained by sponsors. If a representation or warranty is breached, for example, if a mortgage loan is found to be a “high cost” loan under HOEPA, the PSA provides that the sponsor shall replace the affected loans with comparable substitutes. A standard clause in the PSA is that replacement is the sole remedy for investors. Investors will not be able to bring any securities litigation even if one such representation is materially breached, for example, 75% of the mortgage loans turn out to be unenforceable, because the RMBS issuer has never said anything about the enforceability of the mortgage loans in the prospectus. The representation is made by the mortgage loan seller in the PSA, the breach of which should only be remedied through the enforcement of the replacement obligation. Naturally such representations and warranties are only effective to the extent that the mortgage lenders and the sponsors could make good their promises. If they go bankrupt, these representations and warranties will become meaningless, which is what has happened in the non-agency market since the credit crisis. However, we should also appreciate the truly catastrophic nature of the crisis. For example, back in 2006, who would imagine that the

Lehman Brothers Holdings, the holding company of Lehman Brothers and the sponsor of all Lehman Brothers RMBS securities, would close its doors?

Although the "true sale" requirement of securitization requires the seller not to retain any meaningful interest in the securitized assets, the seller does have a repurchase obligation if it breaches any of its representations or warranties under the sale and purchase agreement. Accounting rules still recognize a transaction with a repurchase obligation as a true sale, even though the seller may be requested to repurchase any number of loans at any time.

Investors benefit from such an arrangement because they do not bear any non-credit related risks under the caveat that the mortgage seller will not default on its replacement obligation. Issuers should also be willing to make representations in contract rather than directly in a prospectus as misrepresentation in the latter will often have severe consequences. RMBS underwriters benefit, too. The existence of a representation clause in a contract is much easier to verify than a direct factual representation about certain aspects of the mortgage loans.

An additional "benefit" of such an arrangement goes to the mortgage originator. If an originator securitizes its own loans, it will make the representations and warranties itself to the investors. If an originator sells its loans to a buyer who in turn securitizes the loans, the buyer will make the representations and warranties to the investors but it will inevitably seek the same from the originator, which means that the originator bears the ultimate replacement obligation unless it defaults. The replacement protection is meaningful to investors only when an actual breach can be found. Many, if not most of the mortgage foreclosures are not contested by mortgagors so even if mortgage originators breached certain regulations when originating the loans (e.g. the Truth in Lending Act) and as a result the loans should be repurchased by the mortgage sellers, the servicer will not find out the breach. Even if many mortgage originators were subject to investigations for predatory lending practices during the credit crisis, their practices would not be found to be in violation of laws if they were willing to settle.[55] Mortgage originators would admit no wrong in a settlement and as a result, investors could not use the settlement result as prima facie evidence for a breach of law by mortgage originators.[56] In addition, many mortgage loans were sold or securitized on a servicing-retained basis rather than a servicing-released basis, which means that the originators would continue to service their self-originated loans after securitization. The originators therefore had the incentive as well as resources to cover up any loans that should have been repurchased and replaced by themselves. Even if the originator ceases to service the loans, the new servicer may be an affiliate of the sponsor or an unaffiliated third party that begs the sponsor for servicing business. It is unlikely that the servicer will be particularly active in reporting breaches to bring trouble to its affiliates or patrons.

The trustee seems to be a natural choice for protecting investors' interests but in reality it is not. First, the trustee does conduct a review of the mortgage loan files before it accepts the mortgage loans as trust property. However, such review is always limited to an examination of file completeness rather than a substantive "forensic review". Once the trust has been established, the trustee does not have an active obligation to look for breach of representations or warranties but only a passive obligation to respond to findings from other parties. If it does conduct a review, it will have to be pay for it out of its own pocket. Investors generally do not have the right to inspect the mortgage files themselves and even if the trustee allows them to do so, investors will have to face a free riding problem from other investors.

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[55] See Ruth Simon: *Investors Hit BofA Loan Modifications*, Wall St. J., November 18, 2008, At C1. (Reporting that Bank of America's decision to embark on an $8.4 billion loan modification program to settle charges brought by state attorneys general against Countrywide was challenged by investors. Investors required Bank of America to repurchase the loans involved but Bank of America refused because no court has made findings that the Countrywide loans were "either predatory or unlawfully originated" so no breach of representation should be found.) See also Ruth Simon: *Crisis on Wall Street: Mortgage-Bond Holders Get Voice – Greenwich Financial's William Frey Challenges Loan Servicers Like BofA*, Wall St. J., Dec. 2, 2008, At C3. (Reporting details of the lawsuit)
[56] Id.

Part III Information Flow in the Non-Agency RMBS Market

1. Introduction

Part II of the paper has described how different entities produce and accumulate mortgage loans and finally get them ready for securitization in the non-agency market. A handful of large financial institutions control the gateway to the secondary market and act as sponsors of RMBS issuances. They, together with their depositor affiliates and underwriters, control the disclosure of information about the mortgage loan pools to the investors of the secondary market.

The uniqueness of such information flow is that federal securities laws only govern one aspect of the disclosure activities. Rating agencies require information for their rating and issuers practically need to follow the rules set by rating agencies and disclose to them whatever information they require for rating the securities. What is more, an RMBS issuance is a transaction governed by a trust document, under which the certificateholders (i.e. investors) usually have rights to receive certain periodic reports and other information from the trustee, although there is much overlap between the information disclosed in such reports and in the reports filed with the SEC.

These three types of disclose practices (i.e. disclosure under federal securities laws, disclosure to rating agencies and disclosure under trust documents) are deeply intertwined. Since a trust issuing securities technically fits into the definition of an investment company under the Investment Company Act of 1940, RMBS issuers have been seeking exemptions from this act by relying on Rule 3a-7, which, amongst other things, requires the securities issued by the trust to be of investment grade as determined by rating agencies.[57] How rating agencies rate RMBS securities and what information they require for such ratings in turn has a profound impact on what information is disclosed to investors in prospectuses. Investors'

[57] 17 C.F.R. § 270.3a-7(a)(2).

informational needs have traditionally not been satisfied by the rigid disclosure requirements under securities laws and as discussed later in this section, the SEC has for a long time permitted issuers to disclose other types of information outside the prospectus either through the so-called informational and computational materials or through free writing prospectuses after the offering reform. Lastly, virtually all public RMBS issuances have less than three hundred record holders. Issuers have been relying on Section 15(d) of the Securities Exchange Act of 1934 to suspend their reporting obligations thereunder at the beginning of the next fiscal year after the securities are issued.[58] Once issuers cease to follow federal disclosure rules, investors will have to rely exclusively on contractually provided reports to certificate holders for updated information on the underlying mortgage pools. These reports also form the information base for rating agencies' post-rating monitoring and surveillance activities.

2. Disclosure to Rating Agencies

A. The Rating Process

One must know how rating agencies rate RMBS securities before she understands why rating agencies require certain information. RMBS securities are complicated. Multiple assignments are often necessary as loans are transferred from originators to the sponsor of the issuance, which then transfers them to the depositor that deposits the transferred loans with a trust governed by a trust agreement of hundreds of pages long. Multiple parties are involved: apart from originators, a sponsor, a depositor, a trustee and often multiple servicers (master servicers, primary servicers, special servicers) are involved. Many transactions also have a securities administrator and a risk manager. Weakness in one building block of the transaction will threaten the stability of the entire structure. [59]

[58] Securities Exchange Act of 1934, §15.
[59] See, for example, Moody's, *Moody's Re-examines Trustee' Role in ABS and RMBS*, February 4, 2003.

Rating agencies are expected to analyze a wide variety of issues before they assign a rating. For example, Standard & Poor's claims that it analyzes the following factors before it reaches a rating opinion:

- the credit quality of the pool of securitized assets;
- structural and legal risks of the transaction;
- the payment structure and the cash flow mechanics of the securities;
- relevant operational and administrative risks; and
- any other sources of payment for the securities, e.g., guarantees, swaps, or other forms of credit support for the transaction. [60]

It looks like a full plate of issues but actually that does not necessarily translate into a huge amount of work to rating agencies each time a deal is structured. Transactions off the same "shelf" often adopt the same deal structure (but not the same tranche structure, which is understandably customized for each transaction) and involve the same group of players. A re-evaluation is not necessary each time. The sponsors/depositors are most likely to be familiar faces in the market (see shelf activity data in Figure 8). Transactional services in the non-agency market are also concentrated in the hands of a few institutions. Eight institutions provide trustee services for a total of 95% of all non-agency MBS issuances by volume. Even legal services for RMBS issuances are provided by only a few law firms, which know quite well what legal requirements rating agencies will impose on these transactions.

Figure 13 Top 8 Non-Agency MBS Trustees In 2006

Trustee	Deal Number	% of Total Volume
U.S. Bank	353	26.6%
Deutsche Bank	299	22.8%
Bank of New York	201	13.1%
HSBC	124	9.2%
LaSalle	126	8.8%
Wells Fargo	78	6.3%
JPMorgan	72	5.3%

[60] See Standard & Poor's, *S&P Testimony On the Role of Securitization in the Subprime Mortgage Market*, April 17, 2007, 4.

Citibank	38	2.9%
Total of Top 8	1291	95%
Total Market	1786	100%

(Source: Inside Mortgage Finance)

Figure 14 Legal Advisors in the Asset Backed Securities Market (1/1/2006-9/1/2008)[61]

Issuer Advisor	%	Underwriter Advisor	%
McKee Nelson	13%	McKee Nelson	25.80%
Cadwalader, Wickersham & Taft	12.80%	Thacher Proffitt & Wood	11.20%
Sidley Austin	11.90%	Cadwalader, Wickersham & Taft	10.10%
Thacher Proffitt & Wood	9.70%	Sidley Austin	5.30%
Orrick Herrington & Sutcliffe	8.30%	Stroock & Stroock & Lavan	5.20%
Dechert	4.50%	Dechert	4.90%
Mayer Brown	3.20%	Orrick Herrington & Sutcliffe	4.30%
Hunton & Williams	1.80%	Skadden, Arps	1.90%
Skadden, Arps	1.50%	Latham & Watkins	1.60%
Dewey & LeBoeuf	1.40%	Mayer Brown	1.40%
Top Ten Issuer Legal Advisor Total	68.10%	Top Ten Total	71.70%
Transactions with Issuer Legal Advisors -Total	76.20%	Transactions with Underwriter Legal Advisors - Total	78.80%

(Source: Thomson SDI)

As most of the RMBS issuances are repeated transactions, structural analysis is only peripheral to the entire rating process. The core part of rating process is the processing of a "loan tape" with rating agencies' proprietary rating models. The loan tape contains detailed information about each loan (e.g. loan amount, borrower's FICO score, loan-to-value ratio, etc.) presented in a format conforming to the requirements of the specific rating agency. After processing loan level information, the rating model returns an expected loss distribution of the mortgage pool. It will then check how a proposed tranche performs under different simulated stress scenarios. If that tranche could reach the expected loss requirement for a specific rating level, the tranche will be assigned that rating. [62]

[61] Market share is calculated based on transaction volume. The SDI database covers all asset backed securities issued publicly, including non-agency RMBS securities, agency securities, commercial MBS securities and non-mortgage securities. Agency securities may not involve outside counsels.

[62] Each of the three rating agencies has utilized essentially the same rating process. For descriptions of their rating methodologies, see Standard & Poor's, *supra* note 14; Moody's, *Moody's Mortgage Metrics: A Model Analysis of Residential Mortgage Pools*, April 1, 2003; Moody's, *Moody's Approach to Rating US Residential Mortage-Backed Securities*, December 30, 2008; Fitch, *ResiLogic: U.S. Residential Mortgage Loss Model*, August 14, 2007.

In laymen's eyes, the rating model is like a rating agency's crystal ball through which the future performance of the mortgage pool can be seen. However, underlying the model is just an actuarial analysis every insurer, especially life insurer, conducts every day to assess how much it charges for its insurance policies. Rating agencies and RMBS bond insurers actually co-existed in the market for a long time, especially in the subprime sector, because investors preferred additional comfort from bond insurances.[63] The situation started to change in mid-1997 when investors felt that they were overexposed to a handful of mortgage insurers and the bond insurance fee seemed largely superfluous because rating agencies and bond insurers conducted basically the same analysis and an insurer was almost never called to pay. Since early 2000 bond insurances have become extremely rare across all sectors of the RMBS market. Investors have since then relied exclusively on internal credit enhancement techniques.[64]

The prediction power of the rating model rests on the rating agency's assessment of the historical performance of a large number of similar mortgage loans. For example, Moody's claimed that the prime jumbo/Alt A module of its rating model, Moody's Mortgage Metrics, was backed by its analysis of the performance of over 500,000 prime jumbo loans before introducing the module in 2003.[65] Its subprime module, which it has kept secret until very recently, derives its predictive power from a "large, high-quality data set of two million subprime mortgage loans" in its Moody's Mortgage Credit Research Database.[66] Fitch's model, ResiLogic, is claimed to be based on the performance history of over 1.6 million mortgage loans originated between 1992 and 2000 and encompasses three major credit sectors, prime, Alt A and subprime.[67] Their loan performance data mainly comes from

[63] See Standard & Poor's, *supra* note 14, 65.
[64] Another reason that bond insurers are driven out of the market may be the increasing use of credit default swaps at the CDO level, which provides hedging on another level.
[65] See Moody's, *Moody's Mortgage Metrics: A Model Analysis of Residential Mortgage Pools*, April 1, 2003, 1.
[66] See Moody's, Introducing Moody's Mortgage Metrics, 52.
[67] See Fitch, *ResiLogic: U.S. Residential Mortgage Loss Model*, August 14, 2007, 1.

LoanPerformance, a mortgage industry information provider but Moody's has also contracted loan originators directly for information.[68]

Before the credit crisis broke out, only Standard and Poor's fully licensed its rating model ("LEVELS") to third parties.[69] Investors and deal structurers could run the loan tapes through the rating model themselves. Moody's only licensed its prime/Alt A module. Fitch started to use its new rating model, ResiLogic, in late 2006 and for the first time also made its model available to third parties.

B. Model Input

Appendix 4 sets out the detailed loan tape data fields for the three rating agencies at various times. Standard and Poor's has constantly updated its loan tape inputs although the changes have not been significant over the time. Two most recent versions are presented in the table, one after its May 2004 revision and the other after the latest November 2008 revision. Moody's has not made public its detailed loan tape layout (under the title of "Moody's Latest") until 2007. However, a 2007 Moody's report provided a list of its key data fields then used in its model.[70] Moody's indicated that these key data fields had been established since 2002.[71] Fitch's current model has only been in use since November 2006 and information about inputs for its previous models is not publicly available on its website. The table in Appendix Two presents its most recent requirements for the loan tape layout.

How do rating agencies determine what data fields they require? The purpose of analyzing historical performance data is to identify those factors that could distinguish mortgage loan performances in a meaningful way. For example, all three rating agencies have found out that a borrower's FICO score is a strong indicator of loan default probabilities. The

[68] See Moody's, *supra* note 66, 52.
[69] As early as 1998, Standard & Poor's marketed LEVELS as a risk-based pricing tool for originators. See Standard & Poor's, *Risk-based Pricing of Subprime Mortgage Using LEVELS*, October 1998.
[70] See Moody's, *Moody's Revised US Mortgage Loan-by-Loan Data Fields*, April 3, 2007, 3.
[71] Id., 1.

higher a borrower's FICO score, the less likely the loan will default in the future, although understandably the relationships between these factors and loan performances are non-linear.[72]

Instinctively not every factor has the same weight in determining the outcome of the pool analysis. In Standard and Poor's comprehensive 2000 report on its US residential subprime mortgage securitization criteria, which has not been updated ever since, it listed the following as factors that could affect foreclosure frequencies and loss severities[73]:

Figure 15 S&P Factors	
Foreclosure Frequency	Base Loss Severity
Borrower credit quality (FICO)	Loan to value ratios
Loan to value ratio	Mortgage insurance
Property type	Lien status
Loan purpose	Loan balance
Occupancy status	Loan maturity
Mortgage seasoning	Loan type
Pool size	Loan purpose
Loan size	Property type
Loan maturity	Occupancy status
Loan documentation type	Geographic dispersion
Adjustable-rate mortgages	S&P's Economic Index
Balloon mortgages	Mortgage seasoning
Lien status	

Moody's used to classify the data fields into three categories, primary, highly desirable and desirable.[74] Primary data fields are required to run its rating model, which include data such as the borrower's FICO score, the loan-to-value ratio, the type of the mortgage, property type, Zip code, etc. Highly desirable and desirable data fields are not required to run the rating model but Moody's would utilize conservative assumptions to size for the unknown risks.

Although Fitch requests for a large amount of data for its RMBS ratings, its ResiLogic model identifies 13 factors "sufficiently significant to be incorporated in the

[72] See, for example, Moody's, *Moody's Approach to Rating US Residential Mortgae-Backed Securities*, December 30, 2008, 12.
[73] See Standard & Poor's, *supra* note 14.
[74] See Moody's, *supra* note 70, 3.

model's FOF [frequency of foreclosure] calculation" and uses "a slightly different set of 12 credit dimensions to compute a base LS [loss severity] expectation, similar to those used for the FOF calculation".[75] The factors are listed in the order of influence below.

Figure 16 Fitch's Factors		
Order of Influence	Frequency of Foreclosure	Base Loss Severity
1	FICO	Closing Balance
2	Credit Sector	CLTV
3	CLTV	Loan Coupon
4	Property Type	Property Type
5	Product Type	Occupancy
6	Documentation Type	Loan Purpose
7	Loan Term	Credit Sector
8	Prepayment Penalty	Product Type
9	Occupancy	Seasoning
10	Front-End DTIs	FICO
11	Loan Balance at Closing	Loan Term
12	Loan Purpose	Servicer Rating
13	Seasoning	

The selection of these factors has its practical limitations. For example, both Moody's and Fitch have found that there is a weak correlation between the borrower's debt-to-income ("DTI") ratio and loan performance, although instinctively one may believe that DTI should be a key determinant of a borrower's ability to repay the mortgage.[76] Moody's attributed the weak correlation to the vastly different practices to calculate the DTI ratios. Consequently it has not built DTI into its quantitative model but still require them to be reported. It will make out-of-model adjustments to the loss distribution results.[77] Fitch has incorporated DTI into its model but has ranked it only the tenth of the thirteen factors it uses for predicting the frequency of foreclosure.[78] Its model originally used front-end DTIs but later switched to back-end DTIs because the former lacked predictive power.[79] It seems that the correlation between a certain factor and loan performance cannot always be explained perfectly. For

[75] See Fitch, *ResiLogic: U.S. Residential Mortgage Loss Model*, August 14, 2007, 2.
[76] Id., 9. See also Moody's, *supra* note 72, 15.
[77] See Moody's, Id.
[78] See Figure 16.
[79] See Fitch, *U.S. RMBS: Updated Criteria to ResiLogic Model*, August 14, 2007, 3.

example, although weak correlation between DTI and loan performance is found, rating agencies have nevertheless found that the level of details a mortgage borrower's income/assets is documented (e.g. full documentation, limited documentation or no documentation) is a useful factor to predict the performance of mortgage loans.

Another practical limitation is the lack of performance history of many new mortgage products and new origination practices. Many new mortgage products such as adjustable rate mortgages, interest only mortgages and net amortization mortgages simply do not have a performance history. Although subprime loans have existed for a long time, subprime loans originated before early 2000 were very different from those originated in the past few years. Early subprime loans were smaller in amount and extended to borrowers with much worse FICO scores (around 500s) than recent ones. A substantial down payment was usually required.[80] As Figure 3 shows, very few Alt A loans were originated before 2002, which might be the reason why Moody's actually relied on the performance data of prime loans to rate Alt A loans when it introduced the new rating model in 2003. Although rating agencies have always been providing information on their rating methodologies to the public, until now it still remains a mystery as to how exactly they build their rating models and how confident they are about their models when they do not have sufficient historical data to back their analysis.

3. Mandatory Disclosure Under the Federal Securities Laws

A. Base Prospectus

Most, if not all of the RMBS securities are issued on a shelf registration basis. In a typical RMBS issuance, the issuer (i.e. depositor) maintains an active shelf by filing a prospectus with the SEC ("base prospectus"). Once a mortgage pool has been identified and

[80] See MBS Handbook, 366-369.

the tranche structure of the issuance has been determined, the issuer compiles a prospectus supplement with deal-specific information. The prospectus supplement is then delivered to investors accompanied by the base prospectus.

Base prospectuses generally do not contain any specific information about the mortgage pool to be securitized. Rather, they are written in very broad languages about:

- the types of the securities that could be sold from the shelf;
- general descriptions of the kinds of information that may be disclosed in each section of the prospectus supplement; and
- information about various transactional mechanisms that almost never change from transaction to transaction, such as clearing procedures.

If a shelf is dedicated mainly to securitize mortgage loans from one originator, for example, a major bank may set up a shelf to securitize its own loans, information about the originator's loan programs and underwriting standards will be disclosed in the prospectus to avoid repetition. However, great latitude is often needed as most shelves may be used to securitize mortgage loans (or even mortgage-backed securities in case of a re-securitization) coming from all potential sources and of various qualities. Consequently, base prospectuses of different issuers often do not look that different from each other.

B. Prospectus Supplement and Transaction Documents

The prospectus supplement contains the deal-specific information. The SEC has for a long time recognized that the entire federal securities disclosure regime, designed for securities offerings by operating companies, simply does not work for asset-backed securitization deals. The depositor is a special purpose company so an audit of its financial books is largely unnecessary.[81] There is no business for the management to discuss about. Actually there is even no management – once the mortgage pool is assigned to the trust, the

[81] See SEC, *supra* note 39, 1511.

trust is supposed to be "passively owning or holding the pool of assets".[82] "Instead, information about the transaction structure and the characteristics and quality of the asset pool and servicing is often what is most important to investors."[83]

Over the years, the SEC has worked with the securitization industry to develop a separate disclosure regime through a number of SEC no-action letters and the filing review process. The SEC started to consolidate and codify its positions in 2004 and in May that year issued its proposed Regulation AB for public comments, which consisted of a set of rules specifically governing disclosure matters relating to asset-backed securities.[84] The final rule was promulgated in early 2005 and compliance with Regulation AB was required for all asset-backed securities issued after December 31, 2005.[85] The SEC claimed that Regulation AB largely reflected existing staff positions at the time with a few exceptions although some commentators believed that quite a few significant changes had been made with the introduction of Regulation AB.[86]

Although the SEC proposed to set up a principles-based disclosure regime for asset backed securities and intended to let issuers decide on the materiality of specific information,[87] the bulk of Regulation AB are actually long lists of types of information that the SEC considers to be important enough to include in its own regulation. The SEC did resist industry recommendations to formulate asset-specific disclosure rules.[88] As a result, Regulation AB applies to all asset classes. Appendix 5 lists all the disclosure items to be included in a typical RMBS issuance. Based on the nature of the information, it classifies the disclosure items into seven categories. The key categories are:

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[82] 17 CFR 229.1101(c)(2)(ii)
[83] See SEC, *supra* note 39, 1508.
[84] SEC, *Asset-Backed Securities; Proposed Rule*, Fed. Reg., Vol. 69, No.93, May 13, 2004.
[85] SEC, *supra* note 39.
[86] See SEC, *supra* note 39, 1508. With regard to the industry's view, see John Arnholz & Edward E. Gainor, OFFERINGS OF ASSET-BACKED SECURITIES (Aspen Publishers 2006).
[87] See SEC, *supra* note 39, 1508.
[88] See SEC, *supra* note 39, 1509.

- Transaction parties - information on transaction parties including sponsor, depositor, issuing entity (i.e. issuing trust), originator, trustee and servicer;
- Static pool information – information on performances of past pools securitized by the same sponsor;
- Current mortgage pool information – statistics on pool characteristics or to put it in another way, information on the assets side of the issuing trust's balance sheet; and
- Tranche structure and credit enhancement – how the MBS issuance is to be structured/information on the liabilities side of the issuing trust's balance sheet.

Relevant transaction documents are filed separately on 8-K forms. The most important transaction document is the pooling and servicing agreement ("PSA") pursuant to which the issuing trust is established. The PSA governs the assignment of the mortgage loans by the depositor to the issuing trust, the payment sequence of the cash flow generated by the mortgage pool, a wide variety of administrative matters after the securities are issued and the detailed servicing requirements to be followed by servicers. Key clauses of the PSA are required to be summarized in the prospectus supplement. One appendix to the PSA is the so-called "mortgage loan schedule", which lists, on a loan-by-loan basis, relevant information about the mortgage pool such as the loan amount, interest rate, loan-to-value ratio, loan purpose, and property type. However, the schedule is almost always omitted from the electronic Edgar filing, probably due to file size concerns, and can only be obtained by contacting the trustee or the legal counsel.

Apart from the PSA, the mortgage pool sale and purchase agreement between the sponsor and the depositor, the separate servicing agreements between the master servicer and actual servicers are also disclosed either as appendices of the PSA or separately. If derivatives contracts are entered into on behalf of the trust, they are also disclosed. Disclosure practices about two types of contracts are different from issuer to issuer. The first is underwriting agreement with underwriters. Second, if the mortgages are not originated by the sponsor but rather purchased from unaffiliated third parties, the relevant purchase agreement is not always disclosed as it is not considered to be part of the current securitization transaction.

C. Periodic Disclosures

Before the promulgation of Regulation AB, asset-backed securities issuers, including RMBS issuers, were exempted by the SEC from filing quarterly reports. Instead, the SEC permitted issuers to file the monthly distribution reports required to be distributed to the certificateholders under the PSA under cover of Form 8-K. [89] The SEC also modified Form 10-K to allow issuers to follow special annual reporting rules.[90] Regulation AB created a new Form 10-D for monthly distribution reports and also codified the SEC's positions on annual reports of asset-backed securities.[91]

Disclosures on Form 10-D are required to include the following items:

- Distribution and pool performance information which includes:
    - cash flows received and the sources thereof for distributions;
    - fees and expenses;
    - beginning and ending principal balances of the asset-backed securities;
    - number and amount of pool assets at the beginning and ending of each period;
    - updated pool composition information;
    - delinquency and loss information; and

[89] See SEC, *supra* note 39, 1509.
[90] Id.
[91] 17 C.F.R. 229.1121.

    - material breaches of pool asset representations or warranties or transaction covenants.
- Legal proceedings;
- Sales of securities and use of proceeds;
- Defaults under senior securities;
- Submission of matters to a vote of securities holders;
- Significant obligors of pool assets (usually not applicable to RMBS securities);
- Significant enhancement provider information; and
- Other information.

Annual reports for asset-backed securities are much shorter than those for operating companies. The two most important items are regarding servicers. The annual report must contain a servicer's statement of compliance with its servicing obligations and a report by an independent public accountant regarding compliance with particular servicing criteria. In addition, the issuer is also required to file a Sarbanes-Oxley Act certification that is modified by the SEC for use by issuers of asset-backed securities.[92]

Whatever the specific continuing disclosure requirements are, RMBS issuers only need to comply with them for a short period of time. As RMBS securities are offered and sold under a registration statement filed with the SEC pursuant to the Securities Act of 1933, issuers have periodic disclosure obligations under the Securities Exchange Act of 1934. However, under Section 15(d) of the Securities Exchange Act of 1934, such periodic filing obligations "shall…be automatically suspended as to any fiscal year, other than the fiscal year within which such registration statement became effective, if, at the beginning of such fiscal year, the securities of each class to which the registration statement relates are held of

[92] See SEC, *supra* note 39, 1510.

record by less than three hundred persons."[93] Section 15(d) also authorizes the SEC to determine how to interpret the "held of record" requirement as it deems necessary or appropriate in the public interest.[94]

After each RMBS issuance, the trustee keeps a record of the certificateholders. In the mean time, the securities are registered with and cleared through the system of the Depository Trust Company ("DTC"). When determining the number of record holders, the SEC has required the list to be retrieved from the DTC system.[95] Even so, as is the case for many other types of securities, the RMBS securities are likely to be registered under brokers' names. As there is no need to further determine the real beneficial owners of the RMBS securities, almost all publicly issued RMBS securities qualify for the suspension under Section 15(d). Through a search on SEC filings, the author finds out that, during the period of 2004-2007, for all but a few RMBS securities issued in one particular year, the issuers would file a 15-15D termination report at the beginning of the next year and would provide Section 15(d) as their legal basis for terminating their reports. The number of record holders provided in the 15-15D report ranges from two to more than seventies according to a survey of about 100 randomly selected securities. Of course this number in no way reflects the number of ultimate beneficial owners of the securities.

The SEC has been well aware of the situation and when proposing Regulation AB, solicited public comments on whether it should consider changing the practice but has eventually decided that they "are not at this time revisiting the statutory framework of Section 15(d) regarding the suspension of reporting obligations" because that would raise "broad issues regarding the treatment of other non-ABS issuers that do not have public common equity".[96]

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[93] Securities Exchange Act of 1934, §15(d).
[94] Id.
[95] See Letter of American Bankers Association, http://www.sec.gov/rules/proposed/s72104/aba071504.pdf, 12.
[96] See SEC, *supra* note 39, 1563.

4. Voluntary Disclosures

A. Disclosure of Loan-Level Information Prior to Issuance

As Appendix 5 shows, the SEC has not required RMBS issuers to disclose in statutory prospectuses loan-level data to investors similar to the loan tape data disclosed to the rating agencies. Instead, statistics and averages would suffice. Often an issuer presents pool-level information in a tabular format, in distributional groups and incremental ranges. Important averages, such as the weighted average coupon rate, weighted average FICO score and weighted average loan term are provided.

The potential reasons for the SEC not to require disclosure of loan-level data will be explored in the next part. The decision seems strange, considering how rating agencies conduct their credit analysis on a loan-by-loan basis. As rating agencies indicate, the relationships between loan factors and loan performance are complicated and non-linear so there is no simple formula to determine how many loans will default in the pool based on a few average numbers. The lack of loan-level data disclosure has been considered by many as a main reason why investors have failed to correctly identify the risks.

The critics above have failed to recognize the "special deal" the securitization industry has made with the SEC. Through a series of landmark no-action letters, the SEC has since early 1990s permitted issuers of asset-backed securities to provide "informational and computational materials" to potential investors before a prospectus supplement has been filed with the SEC. Note that these no-action letters were issued before the sweeping offering reform in 2005, when written communications relating to the offering of other securities were still largely restricted to preliminary prospectuses before a final prospectus was filed. Informational and computational materials include information on the proposed transaction structure, asset pool information, various calculations performed by the underwriter about the securities, etc.[97] The reason why the SEC has permitted such communication prior to filing is obvious. Unlike stock/bond issuances, asset-backed securities are often customized for specific investors, negotiations between investors and underwriters are commonplace and the transaction structure is constantly changed to reflect negotiation results. The existing offering regime, under which an issuer is supposed to keep silent before it gets the prospectus ready, does not work for the issuance of asset-backed securities.

Because investors have access to information about mortgage pool characteristics before a prospectus supplement is filed, the natural question is how much information is disclosed to them before issuance. Unfortunately the exact scope of information available to investors is hard to verify, as issuers had not been required to file these informational and computational materials electronically before Regulation AB became effective. The reason is a technical one. When the relevant no-action letter was issued by the SEC, the SEC's Edgar system was just set up and issuers argued that it would be very hard for them to convert extensive data into the ASCII format used by the Edgar system at the time. As a result, the SEC permitted traditional paper filings.[98] The no-action letter had been relied upon by the securitization industry until the SEC officially abolished the old exemption under Regulation AB.

There is evidence that loan-level data may have not always been disclosed. There was once a view in the industry that the SEC prohibited the disclosure of loan-level data in informational and computational materials because such data was not listed in the original SEC no-action letters. [99] The question was finally addressed by the SEC in its proposing release for Regulation AB, in which the SEC clarified that disclosure of "loan level"

[97] 17 C.F.R. 229.1101(a).
[98] See SEC, *supra* note 39, 1558-1559.
[99] Adelson & Jacob Consulting, LLC, *Report from Orlando 2007: Coverage of Selected Sessions of ABS East 2007*, http://www.adelsonandjacob.com/pubs/ASF_2007_Notes.pdf, 24.

information was consistent with the no-action letters.[100] As a result, it has been clear since May 2004 that loan level information can be disclosed to investors as part of the informational and computational materials before the mortgage-backed securities are issued.

The SEC offering reform in 2005 liberalized securities offering practices for sophisticated issuers. Under the new rules, issuers of mortgage-backed securities may qualify as seasoned issuers (but not well-known seasoned issuers) and may always utilize free-writing prospectuses after filing a base prospectus with the SEC.[101] Once the offering reform circular became effective at the end of 2005, issuers of mortgage-backed securities could utilize either informational and computational materials or free writing prospectuses to communicate information not included in the final prospectus to investors during the offering. Essentially all issuers started to use free writing prospectuses to communicate, as they offer more flexibility than the use of informational and computational materials.

After the offering reform, the issuance of mortgage-backed securities usually starts from the identification of a mortgage pool and communications with potential investors, either orally or through free writing prospectuses. Issuers disclose a wide variety of preliminary information through free writing prospectuses such as proposed deal structures, presentations about the experience of the servicers, and draft prospectus supplements to targeted investors. Judging from the formats of some free writing prospectuses, apparently the issuers or underwriters are sometimes using free writing prospectuses to respond to specific written questionnaires prepared by potential investors. Due to requirements under Regulation FD, these free writing prospectuses are often required to be filed with the SEC after use to avoid selective disclosure problems. During this marketing period, issuers and underwriters solicit orders from investors, negotiate with them and finalize the tranche structure based on investor needs. Usually, within a short period after the filing of the first

[100] See SEC, *supra* note 84, 26683.
[101] See SEC, *Securities Offering Reform*.

free writing prospectus, the final prospectus supplement will be filed with the SEC, which, in combination with the base prospectus, will constitute the final 10(a) prospectus.

The author has conducted a research on 2006 SEC filings for all publicly issued subprime mortgage-backed securities. The research indicates that issuers of most of these securities used free writing prospectuses to disclose loan-level data before filing the final prospectus supplement, although there was no uniform format for such disclosure. A few issuers did not disclose such information. However, it is not clear whether this is because the issuers refused to make such disclosure or the investors simply did not bother to ask for the loan-level data. It may quite be possible that the loan-level data provided through free writing prospectuses is not the same as that of the final mortgage pool as the issuer may decide to replace some or even the majority of the mortgage loans before the deal structure is finalized. However, there should be little difficulty for issuers to provide the final loan tape data if investors do make a request for it as they have disclosed at least the preliminary loan tape information to the investors. In the end, it may be fair to conclude that investors have had access to certain loan-level information at least since 2006. The collapse of the RMBS market was largely due to the poor performance of the 2006 vintage of mortgage-backed securities but access to loan-level information did not seem to have helped investors avoid bad decisions at all.

B. Post-Securitization Disclosure

Issuers of RMBS securities have always sought to suspend their periodic disclosure obligations by relying on the exemption under Section 15 of the Securities Exchange Act of 1934. As a matter of fact, PSAs often include a provision that the trustee has the obligation to ensure that the disclosure obligations are timely suspended. The suspension of disclosure obligations under federal securities laws does not mean investors will be kept in the dark though, as investors will continue receiving monthly reports similar to 10-D reports in accordance with the reporting provisions under the PSAs. Such reports are delivered to investors through websites maintained by the trustees or the so-called "master servicers" or "securities administrators", which are sometimes engaged to handle securities-related issues such as compiling reports to the SEC and certificateholders. In its written comment on Regulation AB, Wells Fargo claimed to act as master servicers or securities administrators to more than 80% of the public RMBS issuances as of May 2004.[102] All these websites are publicly accessible after free registrations, even if the applicants do not hold any RMBS securities. As the trustee market is highly concentrated, investors are able to obtain such reports on any securities by visiting only a few websites. Some data vendors aggregate monthly reports from various trustees and offer them on a one-stop basis.

Reports to certificateholders under the PSAs generally do not include updated loan-level data. However, the disclosure websites now generally carry monthly loan-level data back to the issuance data for most, if not all of the RMBS transactions. It is not clear though whether this is the result of increased demands for transparency after the credit crisis or whether this has always been the case. In some RMBS transactions, the trustee has express discretion to disclose additional information to investors as it sees fit. The disclosure of updated loan-level data is likely to be an exercise of such discretion.

The strangest thing about RMBS securities probably is that even if securities laws have not required and trustees have not always disclosed updated loan-level data, such data is still available through private data vendors such as Bloomberg, Intex and LoanPerformance.[103] According to an 2006 ASF and TBMA survey, LoanPerformance claimed to track loan-level data on 85% to 90% of the non-agency RMBS securities.[104] A 2008 news article

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[102] See Letter of Wells Fargo Bank, http://www.sec.gov/rules/proposed/s72104/s72104-9.pdf, 3-4.

[103] See Nomura, *Report from Orlando 2006: Coverage of Selected Sessions of ABS East 2006*, http://www.adelsonandjacob.com/pubs/ABS_East_2006_Notes.pdf, 7.

[104] See The Bond Market Association and The American Securitization Forum, *An Analysis and Description of Pricing and Information Sources in the Securitized and Structured Finance Markets*, Oct. 2006, www.sifma.org/research/pdf/Pricing-Informaton_Sources_Study_1006.pdf, 83.

reported that the percentage at that time was 95%.[105] LoanPerformance does not receive its data from trustees; rather it contracts directly with large originators and servicers.[106] It has always been the data vendor for the three rating agencies and at least the earliest rating models of Moody's and Fitch's were built on the data provided by LoanPerformance. The availability of loan-level data from LoanPerformance even helped Fitch survive in the RMBS market because it was able to test its own rating model on those RMBS securities that it had not rated.[107]

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[105] See Ruth Simon, *Mortgages Made in 2007 Go Bad at Rapid Clip – Delinquencies Worse Than 2006 Vintgage; New Stress on Banks*, Wall St. J., Aug. 7, 2008, At A3.
[106] See The Bond Market Association and The American Securitization Forum, *supra* note 104, 83.
[107] See Fitch, *ResiLogic: U.S. Residential Mortgage Loss Model Technical Document*, January 18, 2007, 2.

Part IV Anatomy of the Blame Game

Part II of the paper reviews how non-agency RMBS transactions are put up. Part III describes the flow of information in this market. This part provides an analysis on the mortgage securitization process. The role of each key party to the securitization process will be discussed and the merits of some of the criticisms on them will be evaluated.

1. Investors, Product Complexities and Leverage

A. Criticisms on Securitization Products

Securitization products are the first to be blamed for causing the credit crisis. One criticism is that information disclosure on these products is insufficient and inaccurate. [108] The insufficiency argument has been indirectly discussed in the previous part by showing that the actual scope of disclosed information is much broader than that included in the prospectus supplement itself. The inaccuracy argument will be dealt with below together with the examination of the role of investment banks in the securitization process.

Another widely-held view about the cause of the credit crisis is that structured products created by Wall Street rocket scientists are too complicated for investors to understand. There are concerns that investors may have not properly understood the structuring assumptions of some of the securities.[109] There are also criticisms that the disclosure documents are so full of legal jargons that investors could not get useful

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[108] See Letters to the Editor, *Opacity Is the Problem With Securitized Mortgages*, Wall St. J., Oct. 8, 2008, At A16. (Professor James H. Stock argues that market fails when information is incomplete or manipulated.) See also L. Gordon Crovitz: *Information Age: Seeking Rational Exuberance*, Wall St. J., Oct. 6, 2008, At A17. (Claiming that the credit crisis is a crisis of the lack of information and that law firms representing banks failed to draft adequate disclosure about investments in mortgage-backed securities. Lawyers didn't fully explain the terms and conditions underlying securities, hiding their real risks.) See also James R. Hagerty: *Mortgage-Bond Pioneer Dislikes What He Sees*, Wall St. J., Feb. 24, 2007. See also, ___, Full Disclosure, Economist, Feb. 21, 2009 (Arguing that subprime mortgage-backed securities can have prospectuses of about 500-600 pages, most of which are devoted to intricate legalese but they do not contain the information about individual loans that is needed to detect default risk.)

[109] See Steven L. Schwarcz, *Disclosure's Failure in the Subprime Mortgage Crisis*, 2008 Utah L. Rev. 1109 (2008), 1114.

information out of it. [110] Many acknowledge the fact that the non-agency market is predominantly an institutional market and the investors in those structured products are not moms and pops but the most sophisticated institutional investors. Several explanations are offered as to why these institutional investors are willing to purchase financial products that they do not understand. They may do so out of fear that their ignorance may be exposed to the sellers.[111] Also, increasing specialization makes it possible that one's knowledge in one type of products is not useful for another type of products. However, institutional investors do not want to hire specialized experts because they do not perceive the increased benefit from specialization could justify the cost of hiring these experts.[112] This line of argument points to the inevitable result that, instead of reviewing hundreds of pages of disclosure documents and looking for any sign of warning about the riskiness of the mortgage securities, investors turn to rating agencies for their analysis results presented in clear and easily understandable letter grades. Over-reliance on rating agencies has therefore caused the market to fail.

Many of the criticisms on structured products target them as a group without differentiating the relative complexities between different structured products. At the bottom of the pyramid are RMBS securities, which are either held by investors directly or used to construct other structured products. For example, cash collateralized debt obligations ("CDOs") are re-securitization of a basket of existing MBS securities. Then there are credit default swaps ("CDS"), which basically are bets on the default probability of certain reference MBS securities. Many CDOs are synthetic ones which emulate the performance of a batch of MBS securities. At last there are CDOs of CDOs ("CDO square"), which are securitization of existing CDO pieces. It should be noted that products such as CDO, CDS and CDO square, either cash or synthetic, are by no means confined only to the mortgage market. They are also widely used for other fixed income securities such as corporate bonds.

[110] Id.
[111] Id., 1115.
[112] Id.

Investments whose returns depend on the performance of a basket of other assets are commonplace in the investment world. Stocks, bonds, commodities, funds and effectively anything whose performance is traceable can be used as references. These techniques have for a long time been used to offer investors exposure to certain assets without actually buying them.

Because of the differences, a fundamental distinction should be made between RMBS securities, which are a distinctive class of securities similar to stocks and bonds, and their derivatives forms such as CDS and CDO, which use RMBS securities as building materials. The distinction should also be made when dealing with criticisms on securitization products.

B. Did Complexities of RMBS Securities Cause the Crisis?

There is no doubt that RMBS securities have complicated structures. However, there is doubt whether structural complexities are the cause of the credit crisis.

First, the asset-backed securities market has already surpassed the corporate bond market in terms of issuance volume.[113] It is hard to imagine that investors will refuse to invest in specialized expertise in a multi trillion-dollar market. In particular, RMBS securities have always been the backbone of the asset securitization market. It is very unlikely that institutional investors will not hire managers with expertise in RMBS securities and simply follow the directions of rating agencies. As a matter of fact, many investors have dedicated mortgage teams and there are investment funds dedicated to investments in mortgage-related products. As Figure 17 shows, even investors in the AAA-rated portion of RMBS securities, which are believed to constitute more than 85% of the total outstanding RMBS securities and likely to be invested by the most conservative investors, are by no means unsophisticated. In particular, it does not make much sense to suggest that the largest holders of AAA-rated

[113] See MBS Handbook, 1.

securities, the two GSEs and federal home loan banks ("FHLBs"), do not understand how RMBS securities work.

Figure 17 Holders of Non-Agency AAA Securities (as of end of 2008)

Entity	Holdings (in billions)	Percentage (%)
GSEs/FHLB	370	25.48%
US banks/thrifts	315	21.69%
Money managers	200	13.77%
Insurance companies	190	13.09%
Overseas	160	11.02%
Hedge funds	100	6.89%
Broker/dealers	75	5.17%
REITs/others	42	2.89%
Total	1,452	100%

(source: Barclays Capital research report[114])

Second, even if there is much to learn about RMBS securities, knowledge of one product can be re-used in investing in another product because issuances of RMBS securities are repeated transactions and even products issued by different issuers are very similar to each other, for the obvious reason that the less exotic the product is, the more investors will be attracted.

In a typical RMBS issuance, the base prospectus is more than 100 pages long. The prospectus supplement is typically between 100 to 200 pages long. If an investor wants to be thorough, she should also read the underlying transaction documents including the PSA and the servicing agreement, each of which is easily hundreds of pages long. However, one should not be fooled by the pure length of the disclosure documents. The information disclosed therein can be classified as structural information, i.e. information on how the mortgage pool is securitized, and asset and transaction party information, i.e. information on the asset pool and parties involved in the securitization. Structural information changes very little from transaction to transaction. For example, it is highly unlikely that the rights and obligations of the parties under the PSA will be completely rewritten from one transaction to the next transaction. The reason why such information needs to be repeated in each

[114] See Barclays Capital, *Residential Credit Outlook for 2009*, 13 (formerly Lehman Brothers research report).

transaction is that the entire securitization structure is built by contract and the rights and obligations of every transaction party and the rights embodied in the securities need to be re-established by contract each time for a new transaction.

If the exact nature of a security needs to be described in a disclosure document, one may find the prospectus for a stock offering to be much longer and more complicated than that for an offering of RMBS securities because the entire text of the corporate code of the incorporation state as well as at least fundamental court cases have to be attached to the prospectus. No one invests in a stock only after she reads the entire corporate code word by word. By the same token, investors actually do not have to read a large portion of the disclosure documents each time. Even if they do, they can use document comparison software to quickly identify what has been changed to the disclosure document since last time.

If structural information is taken out, what remain in each disclosure document are just short descriptions of transaction parties, which are also very likely to be recycled from transaction to transaction, and mortgage pool statistics, which are almost always presented based on the same standard form. It is fair to say that an experienced investor can quickly process the disclosed information and find everything she has not already known.

Third, what exactly has gone wrong in the securitization process? To structure a series of RMBS securities backed by a mortgage pool, the structurer has to do two things. First, the structurer must know how many loans in the mortgage pool will go bad and what the likely losses are. Second, based on the expected loss information, the structurer slices and dices the mortgage pool to create different securities. What has caused the credit crisis is a misjudgment by rating agencies and investors about the expected losses. Needless to say, they are much higher than expected. The complexity of the transaction structures simply does not matter - even if these mortgage pools were sold as whole loans, the same amount of loss would still have occurred. The only difference is that holders of RMBS securities do not share the losses on a pro rata basis. Rather the junior tranches would be hit first.

C. How Are Investors Supposed to Invest in RMBS Securities?

What should an investor do before investing in RMBS securities? It seems that the investor should do exactly what the rating agencies would do before assigning their ratings. The investor should first build its own model that can be used to predict the expected loss of a given mortgage pool. It should then use the model to calculate the expected loss of the mortgage pool and evaluate the safety of the securities it intends to invest in. For such a purpose, the investor must have access to loan level data that its own model requires for the calculation.

It is not clear how many investors have actually done this. Building a model as sophisticated as those used by rating agencies definitely needs time and money. It is unlikely that investors will get whatever loan-level data they want – it may be difficult for investors to get loan-level data beyond what has been disclosed to rating agencies on the loan tape. Some investors in the market definitely have the capacity to build their own models but it is likely that a lot of the existing investors in RMBS securities do not see the additional benefit to build a model that outperforms those of the rating agencies. Reliance on rating agencies is definitely a major cause of the credit crisis but the existence of reliance is not because the securities are complicated, rather investors are relying on rating agencies to perform a credit analysis of the entire mortgage pool.

And indeed it may not be the tradition of the market for investors to worry about credit risks. "The investor did not have to become a home loan savant. He or she did not have to know very much, if anything, about the underlying mortgages. .. The credit mechanisms were designed to be bulletproof, almost risk free. "[115] The idea behind these RMBS securities, according to its creator, is to free investors from credit risk concerns and let them focus their attentions on other risks. One issuer actually lamented the fact that investors had been asking for more and more information about the underlying mortgage pools and believed that this was against the original idea of securitization.[116]

Most of the developments of RMBS securities in early days were in the agency market where the credit risk was outsourced to the GSEs. [117] With regard to the non-agency market, until 2000 the majority of the securities issued had been guaranteed by monoline bond insurers. Investors would still require information about the underlying mortgage loans to calculate the prepayment risk, on which they have already had abundant experience from the agency market. The GSEs have not disclosed loan level data when they issue RMBS securities and investors have been used to calibrating prepayment risks based on aggregate pool information considering loan-level data to be unnecessary.[118] One can only assume that the SEC has impliedly endorsed the idea that investors do not have to conduct their own credit analysis about the underlying mortgage pool and should rely on rating agencies, or else its policy not to require disclosure of loan-level data makes little sense, because only with loan-level data can one make a correct decision on credit risks.

D. Did CDOs Cause the Credit Crisis?

The problem in the non-agency mortgage market was brought to the attention of the general public because of the bust of a couple of hedge funds and structured investment vehicles managed by large financial institutions.[119] Then there were massive write-offs of CDOs, some of which were even originally AAA-rated. Ever since then the public and

[115] Lewis Ranieri, *supra* note 7, 37.
[116] See Mark Korell, *supra* note 49, 99.
[117] See Lewis Ranieri, *supra* note 7, 36.
[118] See Task Force on Mortgage-Backed Securities Disclosure, *supra* note 4, 45.
[119] See in general, Charles R. Morris, THE TRILLION DOLLAR MELTDOWN: EASY MONEY, HIGH ROLLERS AND THE GREAT CREDIT CRASH (Public Affairs, 2008).

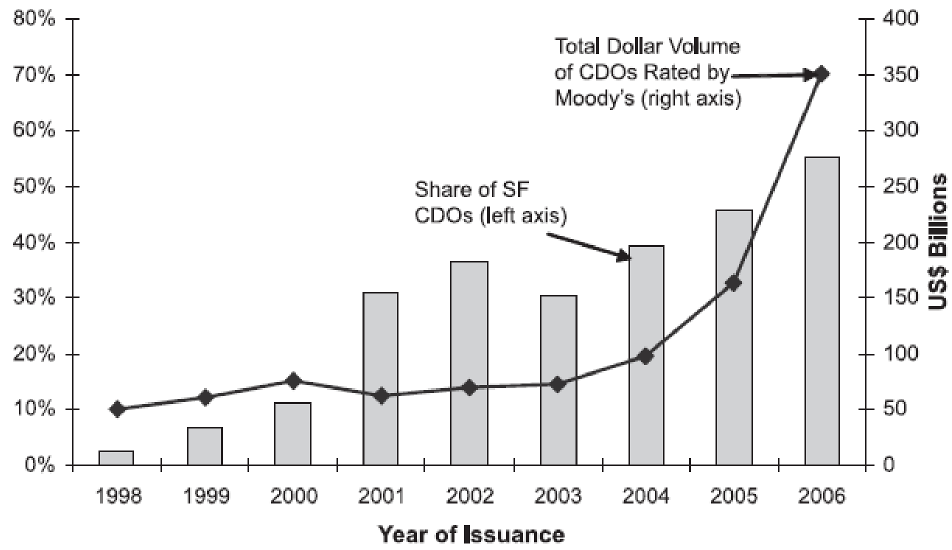
politicians have been fixated on complicated financial products such as CDOs and CDS. Everyone seems to have a say as to how these toxic products of financial alchemy have been clogging the financial system.

It is hardly surprising that complicated CDOs were the first to get busted in the crisis because they composed of mainly junior tranches of MBS securities and were naturally more susceptible to credit risks. Traditionally these riskier junior tranches were purchased by sophisticated investors that had significant investment experiences in RMBS.[120] During that period, CDO products also existed but the underlying assets were predominantly high-yield bonds. The poor performance of these bond CDOs in early 2000s made people want to find new assets for CDOs. RMBS securities were chosen because of their historical strong performances.[121] According to Moody's, the share of CDOs backed by asset-backed securities in the CDO market grew from less than10% to 60% from 1999 to 2006. (Figure 18) Although subprime mortgage-backed securities were widely used to structure such CDOs, they never represented more than 50% of the underlying assets of cash and hybrid CDOs of asset-backed securities during this period. A large portion of the CDOs were backed by prime and Alt-A mortgage-backed securities. (Figure 19)

Figure 18

[120] See Adelson & Jacob Consulting, LLC, *supra* note 14, 3.
[121] Jian Hu: *Assessing the Credit Risk of CDOs Backed by Structured Finance Securities: Rating Analysts' Challenges and Solutions*, Journal of Structured Finance, Fall 2007, 43-59, 43-44.

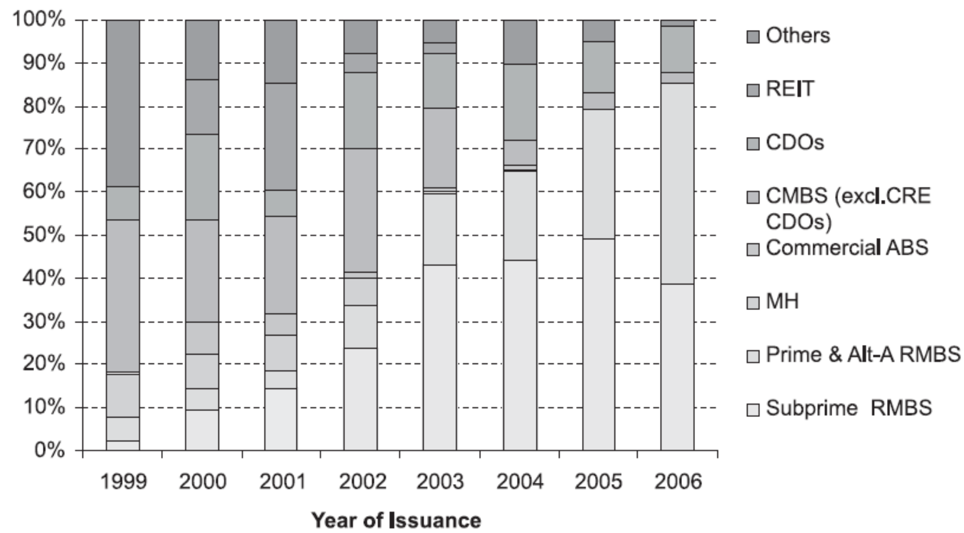
Growing Share of SF CDOs in a Growing CDO Market



Note: The data in this chart does not include non-US$ denominated tranches and wrapped tranches.

Figure 19

Distribution of Asset Types Backing Cash and Hybrid SF CDOs



Note: The share by asset type is calculated by summing up the collateral par amount belonging to a given asset type but from all transactions and dividing it by the total collateral par amount of all transactions. CRE CDOs and synthetic SF CDOs are not included in this exhibit. The share of subprime mortgage related SF CDOs would be higher if synthetic deals were included.

Source: Jian Hu [122]

Did CDOs cause the credit crisis? The answer is yes and no.

The performance of a CDO is entirely dependent on the performance of the underlying assets, which usually are hundreds of junior tranches of RMBS securities. All the

[122] Id., Exhibit 4 and Exhibit 5.

fundamental information required to price a CDO comes from the mortgage pools backing those underlying securities. Such information has already been disclosed in the disclosure documents accompanying the issuances of these securities. The information is also available from private information vendors such as LoanPerformance. For rating agencies, the information is even more easily accessible since the top two rating agencies, Moody's and Standard and Poor's, have rated the majority of the underlying RMBS securities in the first place. If an investor could predict how each RMBS piece will perform based on the information on the underlying mortgage pool, the investor should be able to assess how the entire CDO could perform. The opposite is also true. If an investor systematically underestimates the risk of each RMBS piece, which is sadly the case here, there is no way the pricing of the CDO can be correct. In this sense, the credit crisis was not attributable to CDOs and other derivative products but the mispricing at the original mortgage pool level.

Figure 20 Percentage of Non-Agency RMBS Rated By Top Three Rating Agencies

Company	2007	2006	2005	2004	2003	2002	2001
S&P	93.6%	93.7%	93.4%	94.7%	93.5%	92.2%	85.1%
Moody's	82.0%	91.8%	89.0%	85.3%	72.2%	79.0%	77.5%
Fitch	47.3%	43.9%	42.5%	44.0%	60.0%	56.6%	67.5%

(Source: Inside Mortgage Finance)

On the other hand, the existence of complicated products referenced to RMBS securities did make the collapse more likely to happen. As a CDO adopts a senior/subordinate structure similar to that of RMBS securities, the aggregate credit risk of the underlying junior tranches of RMBS securities is further disproportionally allocated to the junior tranches of the CDO and probably further to the junior tranches of CDO squares. The pricing error, which may be tolerable at the RMBS level, is gradually escalated to a catastrophic mispricing when the securities are re-securitized again and again. It is no wonder that an early sign of problem in subprime RMBS securities could quickly wipe out the value of an entire hedge fund investing heavily in the riskiest portions of these securities. Concentration of risk has made certain entities much more likely to fail and the spectacular failure of a few institutions is more likely to send a shock to the market than a little loss to everyone, causing market frenzy and loss of faith in the entire system.

Synthetic products and high leverages have also magnified the total losses, which may be much higher than actual losses on the underlying mortgage pools.[123] Products such as synthetic CDOs or CDS are essentially just bets between transaction parties about the performance of certain securities, although the derivatives industry has always distanced itself from the gambling industry. Some of the bets are without doubt for hedging purposes or for the purpose of diversification and gaining exposure to the mortgage market indirectly. However, if the general characteristic of derivatives trading also holds true in the mortgage market, a lot of the bets are purely speculative. What further exacerbates the problem is the fact that many transaction parties to these bets were highly leveraged. Hedge funds borrowed heavily by using their AAA-rated CDOs as collateral and protection sellers such as AIG wrote credit default swaps without the need to putting aside any capital because it was not regulated as insurance products.[124] Combining these double-edged finance techniques, financial engineers have created a financial system that is much more sensitive to small movements and unexpected events, i.e. a system that is much easier to fail.

2. Originate-to-Sell Model and Rating Models

A. Criticisms on the Origination-to-Sell Model

To a lot of the critics looking at the other end of the securitization process, the cause of the credit crisis is so obvious – over the years originators relaxed their underwriting

[123] See Carrick Mollenkamp and Serena Ng: *Wall Street Wizardry Amplified Credit Crisis – A CDO Called Norma Left "Hairball of Risk"; Tailored by Merrill Lynch*, Wall St. J., Dec. 27, 2007, At A1. (The use of derivatives "multiplied the risk" The subprime-mortgage crisis is far greater in terms of potential losses than anyone expected because it is not just physical loans that are defaulting.)
[124] See Joe Nocera: *Propping Up A House of Cards*, N.Y. Times, Feb. 28, 2009, At Sec. B, P.1.

standards and made too many bad loans that should have never been made. [125] The evidence is said to be abundant. Many of the securitized loans have loan-to-value ratios as high as 95% percent, which means that if the property value drops by 5%, the borrower will be under water. [126] Over time the documentation of borrower income has become loosened. According to LoanPerformance, 25% of the subprime mortgage loans originated in 2001 were made to borrowers with little or no income verification. In 2006, the percentage rose to 45%.[127] These "liar's loans" were often extended to borrowers who could not qualify for full-documentation loans. Lastly, many lenders were under investigations for predatory lending practices that tricked people into borrowing under expensive terms.

According to the critics, the originate-to-sell model creates a classic moral hazard problem - originators originate bad loans because they do not bear the consequences once they quickly get rid of them through securitization. As a result, they have the incentive to reduce their screening efforts once the chances of securitization increase. [128] There are reports that originators keep good loans on their own balance sheets and sell bad loans to the secondary market. [129] Rating agencies have also contributed their research. They have found that loans originated by different originators would perform very differently with some having much higher default rates than others. [130] This suggests that the source of the loans has a significant impact on their performance as different originators exert different levels of efforts when originating the loans.

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[125] See Alan S. Blinder, *Six Fingers of Blame In the Mortgage Mess*, N.Y. Times, Sep. 30, 2007, Sec. 3, Pg. 4. See also Standard & Poor's, *supra* note 16.
[126] See Nicole Gelinas, *The Rise of the Mortgage "Walkers"*, Wall St. J., Feb. 8, 2008, At A17.
[127] See Damian Paletta, *Subprime Players Get Washington Summons – Regulators Ask Wall Street If Investor Demand led to Looser Loan Standards*, Wall St. J., Mar. 28, 2007, At A2.
[128] See Benjamin J., Keys, Mukherjee, Tanmoy K., Seru, Amit and Vig, Vikrant, *Did Securitization Lead to Lax Screening? Evidence from Subprime Loans*(April 2008). EFA 2008 Athens Meetings Paper. Available at SSRN: http://ssrn.com/abstract=1093137.
[129] See James R. Hagerty and Dan Fitzpatrick, *BofA Feels Bite of Move Into Mortgage-Backed Securities – Delinquency Rates Among the Highest In Banking Industry*, Wall St. J., Feb. 25, 2009, At C8. (Reporting that Bank of America's loans kept on its own books have performed better than those sold in the form of securities.)
[130] See Standard & Poor's, *The Spotlight's On US Alt-A RMBS Issuers As Performance Deteriorates Rapidly*, Dec. 20, 2007 (Arguing that issuer differences are significant.) See also Standard & Poor's, *US Subprime RMBS Performance Update August 2008 Distribution Date*, Sept. 30, 2008 (Reporting comparisons of issuer practice differences).

B. The Meaning of Risk-based Pricing

The arguments blaming originators for creating the mess have failed to recognize the role of risk-based pricing mechanisms in investments. Loans extended to less creditworthy borrowers do not necessarily translate into bad lending decisions. The increased lending rate may well cover the additional risk associated with the decline of borrowers' creditworthiness. It is clearly possible that one may make a profit from lending to borrowers with bad credits if she can price the risk properly and lose money from lending to borrowers with much better credits if she gets the pricing calculation wrong.

For RMBS securities, if one agrees that a downgrade by rating agencies after the initial rating translates into a mispricing at the first place, it is not even clear whether so far investors have lost more from investing in subprime loans than from investing in Alt-A loans, which generally have better credit qualities. Figure 21 lists the total downgrades of structured mortgage products issued between the first quarter of 2005 and the third quarter of 2007 by Standard and Poor's as of the end of 2008.[131] An interesting observation is that 31% of the Alt-A RMBS securities, calculated according to the original issuance volume, have been downgraded, of which 58% of the downgrades are from investment-grade to speculative-grade. The downgrade percentage for the subprime RMBS securities is actually lower – at 27% - and of which 60% are from investment-grade to speculative-grade. Of course there is a possibility that the downgrades of subprime RMBS securities are generally more severe than the downgrades of Alt-A RMBS securities. For example, most subprime RMBS securities may be downgraded directly from AAA to CCC while most Alt-A downgrades are from single A to BBB. No matter whether this is the case, the comparison illustrates the point that it is wrong to only focus on the qualities of the loans and blame originators for originating

[131] See Standard & Poor's, *Structured Finance Rating Transition and Default Update As of Dec. 12, 2008*, Dec. 19, 2008.

bad loans. How accurately these loans have been priced at securitization also directly affects the total losses that the investors will finally suffer.

Figure 21 S&P: Original Issuance-Based Cumulative Performance And CreditWatch[132]

U.S. RMBS, CDOs of ABS, and SIV lites for Q1 2005-Q3 2007 vintages

Subsector	Original issuance (in billions)	Down graded	% of issuance	IG to SG	% of downgraded	Defaulted	CW negative	Downgraded CW negative
U.S. CDO cash flow CDO of ABS	261.87	233.21	89.06%	192.64	82.60%	6.74	143.11	140.78
U.S. CDO hybrid (mainly CDO of ABS)	166.53	149.28	89.64%	138.69	92.91%	29.88	53.12	48.68
Global CDO market value/SIV lites	33.59	2.42	7.20%	1.98	81.82%	1.89	5.21	0.19
U.S. synthetic CDO of ABS	52.25	17.13	32.78%	12.64	73.79%	0.18	2.64	2.47
Total	514.24	402.04	78.18%	345.95	86.05%	38.68	204.08	192.13
U.S. RMBS Alt-A	1,029.36	319.54	31.04%	186.1	58.24%	1.95	35.1	3.83
U.S. RMBS CES	82.74	70.47	85.17%	38.9	55.20%	13.11	1.46	0.21
U.S. RMBS NIMS	26.06	16.05	61.59%	13.44	83.74%		1.61	0.25
U.S. RMBS-other	204.97	60.3	29.42%	20.67	34.28%	0.46	20.19	6.25
U.S. RMBS prime	359.11	53.41	14.87%	10.57	19.79%	0.26	0.44	
U.S. RMBS subprime	1,056.77	287.68	27.22%	174.89	60.79%	10.35	36.29	5.15
Total	2,759.01	807.46	29.27%	444.57	55.06%	26.13	95.08	15.7
ALL	3,273.25	1,209.50	36.95%	790.52	65.36%	64.81	299.17	207.82

C. Overview of Key Underwriting Practices

Another weakness of the criticisms on originators is that they fail to distinguish relaxed underwriting practices that investors are aware of from those relaxations that have been hidden from the investors.[133] For example, investors and rating agencies are well aware of the existence of liar's loans. As discussed below, rating agencies have even developed

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132 Downgrades include IG to SG as well as defaults; IG to SG includes defaults; and CW negative includes downgraded CW negative dollar amounts. IG—Investment grade. SG—Speculative grade. CW—CreditWatch. SIV lites—Structured investment vehicle lites. Alt-A—Alternative A. CES—Closed-end second lien. NIMS—Net interest margin securities.

133 See Standard & Poor's, *supra* note 16.

coding systems and required issuers to assign a correct documentation code to each loan. It does not take the mind of a genius to figure out that loans with no documentation or low documentation of income and asset can be easily manipulated by borrowers. The same is true about loans with high loan-to-value ratios, loans with complicated features such as adjustable rate mortgages and loans borrowed for investment purposes. If investors are aware of the relaxations, it is strange that the originators should be blamed for originating them because investors could have bargained for a higher discount on purchase prices or simply refused to buy securities backed by these loans.

It should be conceded that there is doubt whether some of the originators' underwriting practices are sound and if they are not, whether the risk has always been adequately disclosed. To understand what may have gone wrong with origination practices, this section provides an overview of three key aspects of origination practices focusing in turn on one of the three "Cs", i.e., character, collateral and capacity.

In late 2007, Fitch conducted a widely-cited research focusing on the impact of poor underwriting practices on the performance of subprime RMBS securities.[134] Fitch's basic view was that data integrity issues (e.g. debt-to-income ratios were incorrectly stated on the loan tape) might not be the primary driver of the underperformance of these securities. Rather, data that is technically accurate but does not reflect the true credit risks of the borrowers might have a more significant impact. To assess the validity of such claims, Fitch reviewed the mortgage loan files for a sample of 45 loans originated in 2006 that suffered early defaults. Many of the loans had apparently strong credit characteristics such as high FICO scores.

Some of Fitch's findings are as follows:

[134] See Fitch, *The Impact of Poor Underwriting Practices and Fraud in Subprime RMBS Performance*, November 28, 2007.

- 66% of the loans involve occupancy fraud. The property is stated as owner-occupied but has never been occupied according to information provided by borrower or field inspector.
- 51% of the loans have property value or condition issues. The appraisal done by Fitch is materially different from original appraisal or original appraisal contained conflicting information or items outside of typically accepted parameters.
- 48% of the loans involve alleged first time homebuyers whose credit reports showed mortgage information.
- 44% of the loans have questionable stated income or employment that is often in conflict with credit report information or cannot be reasonably explained.
- 22% of the loans involve fraud alerts noted on credit reports.
- 18% of the loans involve credit reports that show questionable ownership of accounts (name or social security numbers do not match).
- 16% of the loans involve credit reports based on "authorized" user accounts.
- 16% of the loans involve strawbuyer/flip scheme indicated based on evidence in servicing file.

One must realize that the list above is not representative, because the sample is too small and the selection criteria (early default loans) are biased. In addition, it should be noted that the third highest ratio in the list, 48% of the loans involving first time homebuyers actually means that originators have suffered a loss by not checking the information, as rating agencies believe loans to first time homebuyers will perform worse than loans to other buyers because they tend to "underestimate the true costs of home ownership."[135] The rest of the findings can be categorized into issues relating to three factors: character, collateral and capacity issues.

[135] See Moody's, *supra* note 72, 14.

(1) FICO Scores

Long gone are the times when loan officers judge the character of a borrower by feeling the firmness of her handshake. FICO score is everything. Despite of warnings that FICO scores may not accurately reflect an individual borrower's creditworthiness in borrowing long-term debts because they are designed primarily for short-term consumer lending, there is no doubt that FICO scores are the very first factor considered by most mortgage lenders before they make a loan. Rating agencies inevitably require FICO scores to be reported on loan tapes. Fitch even publicly lists FICO scores as the No.1 factor in its calculation of frequencies of foreclosure.

It is widely known that FICO scores can be fairly easily manipulated by ordinary people. And if people do not want to take the trouble, there are thousands of credit repair companies just one click away although many if not all of them are scams. One way to boost one's FICO score is to dispute with credit bureaus about certain negative credit histories listed on the credit reports. By law credit bureaus have thirty days to investigate but they have so many to investigate, partly because there are indeed a lot of errors in credit reports.[136] A credit repair company may take advantage of the loophole and send numerous complaining letters. Often times credit bureaus will simply take out the negative items without investigation.

Another way to boost one's FICO scores is piggybacking. A borrower may pay a credit repair company to find someone with sterling credit agreeing to add the borrower as the "authorized user" of a credit card account of the second person. Within a few months' time, the borrower's FICO scores may be inflated by 50-100 points. The credit bureaus and the company designing the algorithm, Fair Isaac Corporation, are all well aware of such piggybacking abuses. The newest version, FICO '08, have already plugged the loophole by

[136] 15 U.S.C.§1681i (a)(1).

ignoring such authorized accounts.[137] Still there are ways to pump up one's credit score with some institutional assistance. For example, as credit bureaus collect information from all kinds of sources, a company may report to credit bureaus that it has opened a proprietary account for a customer with a high credit limit. The existence of such a credit line will help improve the borrower's FICO scores, although the borrower actually cannot tap the credit line.[138]

(2) Property Appraisal Value

An accurate appraisal of the mortgaged property is fundamental to the calculation of loan-to-value ratio. However, property appraisal is more of an art than science and the appraisal value is inherently subjective. Different appraisal methods require different levels of investigations. The latest Standard and Poor's rating model accepts nine types of appraisal methods.[139] The most complete appraisal is a full appraisal on URAR Form 1004 while the most cost-effective appraisal method is appraisal through an automated appraisal model software ("**AVM**"), which compares the appraisal value with comparable sales prices in the neighborhood nearby. Many loan originators use AVM extensively as a quality control measure. Due diligence firms also use AVM to check appraised values when they conduct due diligence on the mortgage pools.

Figure 22 Standard and Poor's Appraisal Classifications

Appraisal Method	Description[140]
Tax Assessment	The valuation of the property by a public tax assessor for the purpose of tax assessment.
Broker Price Opinion	An opinion of the value f a property from a local real estate broker based on comparable properties for sale (or sold) in the subject property's location.
Drive-By (Form 704)	More commonly known as the "drive-by" report, this form is used primarily for second mortgages and home equity loans. This is generally exterior-only and includes a comparable approach with an estimate of value given on the subject property by the appraiser. This report may or may not include photos.
Full appraisal (URAR Form 1004 and	More commonly known as the "full appraisal," the actual name of the report is the Uniform Residential Appraisal Report (URAR). This report encompasses a detailed

[137] See Dean Foust, et. al., *Credit Scores: Not-So-Magic Numbers*, Business Week, Feb. 18, 2008, 38.
[138] Id.
[139] See Standard & Poor's, *RMBS: Residential Mortgage Input File Format For LEVELS Version 6.5*, Nov. 25, 2008.
[140] See Standard & Poor's, *RMBS: Appendixes to Glossary for File Format For LEVELS Version 5.7*, Oct. 20, 2006.

equivalents)	interior and exterior inspection (including neighborhood analysis) and has several addendums including plot graphs, photographs, appraiser representations and warranties, and environmental information. The 1004C and 70B forms are used to obtain the appraiser's analysis and estimate of the value of single-family properties and PUD units that secure first or second mortgages. Form 1004C and Form 70B, Manufactured Home Appraisal Report (3/05), are new and distinct forms.
Property Inspection and Marketability Reports (Form 2070 and Form 2075)	These reports are not appraisal reports. They are generally exterior-only (Form 2070 may be interior also) inspection reports that require an inspection of the subject property from the street by a state-licensed or state-certified appraiser without an estimate of market value for the property.
Form 2055, Form 1075, Form 466, and Form 2095 (Exterior only)	This form is a property inspection report in which an exterior inspection is performed, and is used to document appraisals for one-family properties (including units in condominium or PUD projects). It requires a quantitative sales comparison analysis in which the appraiser assigns a dollar value to reflect the market's reaction to any features of comparable sales that differ from those of the subject property. Form 2055, Exterior-Only Inspection Residential Appraisal Report (03/05), is a new and distinct form. The Form 2055 with Interior and Exterior and Exterior Only inspection options was retired as of Nov. 1, 2005, (Fannie Mae) and Jan. 1, 2006 (Freddie Mac). The code should remain in place indefinitely for the use in credit-enhancing seasoned mortgages.
Form 2055 (with Interior Inspection)	Same as above, with interior inspection
Automated Valuation Model	Automated system that is used to derive a property value without the opinion of an appraiser. These systems are typically hedonic models or repeat sales indices.
No Appraisal/Stated Value	The value of the subject property as declared by the borrower on the loan application. No valuation verifications are made.

The subjective nature of property appraisal and the flexibilities of different appraisal methods make it a good candidate for manipulation by all interested parties. First, a home owner with no equity in her house because of property value declines may find an appraiser to inflate the property value, get a home equity loan and mail the key to the bank immediately after closing. [141] This is particularly workable in states such as California, where lenders are prohibited from going after personal assets of mortgage borrowers. A home buyer may also do tricks to buy a house with 100% debt financing. As a 15%-20% difference in appraisal value is usually within the margin of error tolerated by the appraisal industry, a property seller may cooperate with a buyer with no money to make the customary 20% down payment to get a "cash-back mortgage". They first artificially inflate the purchase price by 25%. Then they get a bank willing to lend up to 80% of the inflated purchase price, which equals to real purchase price agreed upon by the parties. Finally the property seller gives the rest 20% to the borrower so that the borrower can make the 20% down payment required by the bank.

[141] See Ranieri, *supra* note 7, 39.

Eventually the seller gets exactly the same purchase price she wants and the borrower gets a house 100% financed by the bank.[142]

Second, mortgage brokers may team up with unscrupulous appraisers to inflate property value so that their customers could get the loan and they could get their commissions. Originators generally would require brokers to choose only from the appraisers they approve. However, mortgage originators serving the non-agency market are only supposed to keep the mortgage loans for a couple of months. Originators, like brokers, have strong incentives to get as high an appraisal value as possible so that they may later sell the loan at the best price. Indeed, during the credit crisis, there were allegations that originators would pick property appraisers that would be willing to revise their appraisal results so that the deal could get through.[143] Some would also threaten to cut business with those appraisers who decline to cooperate. Under the originate-to-sell model, one should fully expect that originators' behaviors would be fundamentally different if they expect to hold the mortgage loans on their own balance sheets. In the latter case, originators would naturally be more conservative and discredit any appraisal result they do not believe in. In addition, pumping up appraisal results when originators keep their own loans is also more difficult as originators tend to work directly with borrowers instead of through mortgage brokers and they know the property value in the neighborhoods they do business in.

(3) Income Documentation

The debt-to-income ratio of a borrower determines her capacity to repay the loan. How a borrower's income is required to be documented affects many borrowers' ability to borrow a mortgage loan. Borrowers who are self-employed or who do not have stable income

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[142] For a detailed analysis of such cash-back mortgages, see Itzhak Ben-David, *Manipulation of Collateral Values by Borrowers and Intermediaries*, http://www.ssrn.com/abstract=991387 .

[143] See Amir Efrati, *SEC Probes WaMu on Appraisals – Regulator Checks Handling Of Loans Possibly Based On Inflated Valuations*, Wall St. J., Dec. 21, 2007, At A2. (Reporting that SEC and New York Attorney General investigated whether Washington Mutual compromised the independence of appraisers it hired.) See also Amir Efrati, *New York Sues First American Unit In Probe of Home-Loan Appraisals*, Wall St. J., Nov. 2, 2007, At A4. David Cho, *Pressure at Mortgage Firm Led to Mass Approval of Bad Loans*, Washington Post, May 7, 2007.

often could not satisfy the more stringent documentation requirements for prime loans. In the Alt-A and subprime sectors, loan originators usually relax certain aspects of the traditional "full documentation" requirements to cater to the needs of those borrowers. Different lenders have developed very different documentation programs. In addition to full documentation, there are "reduced documentation"," limited documentation", "documentation lite", "streamline program", "stated income program" and many others. Each program specifies the types of information it requires.

Due to lack of standardization, documentation programs of different originators are often not comparable. Rating agencies have always known the documentation differences and have designed different coding systems. From 2004 to 2008, Standard and Poor's system recognized six types of documentation programs.[144] Moody's had a similar five-grade system for full doc, alt doc, limited doc, reduced doc and no doc before the credit crisis.[145] According to Moody's itself, the documentation system was not comprehensive enough to capture the nuances in the industry. In November 2006, it significantly updated its documentation system and designed a documentation program of sixteen types with very detailed definitions for each type and a special treatment of "special programs" pre-verified by Moody's similar to the streamline programs defined by Standard and Poor's.[146]

Figure 23 Standard and Poor's Documentation Coding System

Code	Description[147]
C	No income and employment verification; asset verification required only for purchase money loans. (Standard & Poor's definition of asset verification is the confirmation of funds used for a down payment and closing costs on a purchase money mortgage loan. If a purchase loan does not have assets verified, an increase to the foreclosure frequency is assessed. Asset verification is not required for refinance transactions, either rate/term or cashout as it is a means of determining the source of funds for a down payment and therefore not applicable to refinance transactions.)
V	Verbal verification of employment (VVOE- encompassing currently employed, start date,

[144] See Standard & Poor's, *RMBS: Appendixes to Glossary for File Format for LEVELS Version 5.6*, Oct. 18, 2004; Standard & Poor's, *RMBS: Appendixes to Glossary for File Format for LEVELS Version 5.7*, Oct. 20, 2006; and Standard & Poor's, *RMBS: Appendixes to Glossary for File Format for LEVELS Version 6.3*, Mar. 14, 2008.

[145] See Moody's, *Moody's Approach to Coding Subprime Residential Mortgage Documentation Programs: Updated Methodology*, Nov. 28, 2006.

[146] Id.

[147] See Standard & Poor's, *supra* note 140.

	position, and probability of continued employment).
X	Less than 12 months income and employment verified through pay stubs, bank statements, or any other verifiable form (typically one pay stub and VVOE).
Y	12 to 23 months income and employment verified through W-2s, pay stubs, bank statements, or any other verifiable form (typically one pay stub and one W-2 and VVOE for salaried borrowers or one-year federal tax form 1040 for self-employed borrowers).
S	Streamline (a refinance program designed for portfolio retention whereby the current servicer may refinance an existing borrower. This field is only to be used for a Standard & Poor's approved streamlined refinance program).
Z	24 months or more income and employment verified through W-2s, 1040s, bank statements, or any other verifiable form).

It was not clear how Fitch coded documentation programs before the credit crisis. In August 2007, it updated its documentation program to the matrix system below[148]:

Figure 24

Fitch U.S. RMBS Documentation Program Categorization Matrix

Income	VOE (mos)	VOA	Mortgage History (mos)	Ratios	Treatment
1 or more paystubs	min 24	1 out of 2 verified		yes	FULL
1 year W2s / tax returns OR 2 years W2s / tax returns	min 12			yes	FULL
1 paystub + 1 year W2s	2 out of 3 verified			yes	FULL
12+ mos. Bank Statements to Verify Income				yes	FULL
DU/LP Approved (Prime/Alt-A)				yes	FULL
Written VOE (Fannie Form 1005)				yes	FULL
Employee Programs					
Lender Driven Programs for Credit Worthy Borrowers				yes	FULL
Streamline Refinances w/ 1 paystub OR 1 year tax returns	min 12		min 12	yes	FULL
In-House Model Driven Programs	case by case analysis				FULL/REDUCED/LOW/NONE
6-11 mos. Bank Statements to Verify Income	min 12	1 out of 2 verified		yes	REDUCED
Stated Income / NIV	3 out of 3 verified			yes	REDUCED
Stated Income / NIV	2 out of 3 verified			yes	LOW
Stated Income / Stated Assets (SISA)	min 12	Stated	min 12	yes	LOW
No Ratio	3 out of 3 verified			no	LOW
Stated Income / NIV	1 out of 3 verified			yes	NONE
NINA				no	NONE
No Doc				no	NONE

The lightest documentation requirement, of course, is no documentation, or the so-called NINJA (No Income, No Job, Asset) or NINA (No Income, No Asset) loans. Some of the documentation programs are apparently open invitations to cheat. One may leave the phone number of her friend as her employer's contact information and pass the verbal employment verification. She may also take a couple of months to make a fake bank statement by depositing money borrowed from friends. If a documentation program only requires borrowers to state their income in the application and no one will verify it, some

[148] See Fitch, *supra* note 79, 4.

applicants will definitely lie. Understandably loans originated under documentation programs less stringent than "full documentation" perform worse. However, interest rates charged on these loans are increased accordingly to compensate the incremental credit risks.[149] There are other compensating factors. For example, loans with low documentation or no documentation are often required to have much lower loan-to-value ratios and significant down payments.[150] Some originators apparently examine the reasonableness of stated incomes by surveying the income levels of the borrowers' professions in the neighboring regions. One thing that most originators may have not done so far, though, is verification of the stated income with tax authorities. Apparently almost all mortgage borrowers have granted originators powers to access their tax returns by signing IRS 4506T forms (Request for Transcript of Tax Return). Originators have refused to use tax returns to verify the stated incomes, citing reasons such as the service is too costly ($20 dollars/file) or it is too time-consuming (1 business day).[151]

D. Who Made the Rules?

In its research report, Fitch concluded that failure by originators to apply prudent origination practices was the major reason why the data provided to rating agencies, though technically accurate, did not reflect the true credit risks of the borrowers. It claimed that mortgage originators could have checked credit reports for conflicting information and performed additional research in case of doubt. Originators could also have used AVMs as a cost-effective way to flag out suspicious appraisal results and conducted review appraisals. With regard to stated income loans, originators could have adopted reasonableness tests and

[149] See MBS Handbook, 20.
[150] Id.
[151] See Gretchen Morgenson, *A Road Not Taken By Lenders*, N.Y. Times, Apr. 6, 2008, Sec. BU, P. 1. (Reporting that a company selling its IRS verification services was rejected by many lenders because they claimed it was too costly ($20 per loan) or too time-consuming (one business day). People only used the service when spot-check the quality of the loans after they were made. Also discussing the possibility of selling fraudulent loans back.)

if the stated income fell outside of the parameters by an established variance, they could have conducted additional research.

Of course originators could do all of the above and make better-underwritten loans. The only problem is that an originator would not have any benefit if it does anything that rating agencies' models do not capture. An originator may know a lot about a borrower by checking her credit reports but all that matters in the credit rating agencies' models is the FICO score itself. Rating agencies recognize a wide range of property appraisal methods, some of which, for example a full appraisal, are treated more favorably than others, for example an appraisal by AVM. As a result, the calculation most originators will do is comparing the cost saved by a less comprehensive appraisal method and the additional price increase if a more comprehensive appraisal method is carried out. An originator may well decide that it is better off if it only conducts an AVM appraisal rather than a full appraisal. An originator may do the same calculation and design its documentation programs that receive the maximum benefits from rating agencies' models. For example, an originator is likely to verify only 12 rather than 23 months of income and employment if it designs a documentation program that it wants to be coded as "Y" under Standard and Poor's documentation coding system. Eventually whatever originators believe to be the right underwriting practices do not count at all. Rating agencies make the final judgment call on the value of the mortgages they originate by assigning different foreclosure frequencies and loss severity levels to different loans.

In a market where rating agencies have the final say, it is unlikely that originators have the incentive not to follow their commands. Actually even if an originator really wants to stand out and sticks to its own rules, it is unlikely to be rewarded by the market. Small originators' loans are likely to be mixed with other loans when being securitized, which makes it hard for these originators to demonstrate their track records. Lenders with stricter rules will be shunned by mortgage brokers and lose out to those that follow the standards of the rating agencies. Finally, when the real estate market is booming, there will be no significant performance difference between loans originated under different standards. Actually bad loans are likely to be better sought after because of better returns.[152] When the market collapses, even good lenders suffer.[153]

As a matter of fact, it is even not good policy to let originators decide what to originate under the originate-to-sell model. Critics have wrongly characterized the relationship between the originators and the secondary market. Purchasers of mortgage-backed securities are sophisticated institutional investors and they are further assisted by investment banks and rating agencies. The principle of caveat emptor should apply. In addition, as most of the originators in the non-agency market have made it clear that marketability of the loans is their top concern, investors should expect that originators will make whatever loans the market is willing to purchase and should therefore impose effective controls on the quality of the loans.

In addition, most originators in the non-agency market do not ask themselves the hypothetical question whether to keep the loans they originate on their own balance sheets or to securitize them in the secondary market. As originators rely heavily on short-term financing rather than deposits to finance their operations, they originate non-conforming loans with a clear view to sell them. The real question they will ask themselves is whether to securitize the mortgage loans or to sell them to whole loan traders. Whatever the choice they make, it is crucial that the mortgage loans must be securitized within the first few months after origination. As a result, loan originators are supposed to hold the loans for only a short period of time under the originate-to-sell model. If so, it seems very strange to suggest that an

[152] For example, New Century's loans were sought after in the early years because they were cheap and performed well. See David Cho, *supra* note 143.
[153] See Nelson D. Schwartz, *Wait, Weren't These the Safer Bets?*, N.Y. Times, Mar. 16, 2008, Sec. BU, P.2. (Reporting that Thornburg, the second-largest independent mortgage company after Countrywide was on the verge of bankruptcy although it refused to get into the subprime business and only originated jumbo loans.)

originator with only a short-term interest in the loans it originates should be entrusted to write underwriting standards that affect the interests of the long-term holders of these loans in the first place.

E. Who Failed?

Originators should be charged guilty if they have failed to deliver what they have promised. And they are always on the hook. For example, if they force appraisers to inflate the property appraisal value, it is very likely that the appraisal will be in violation of the relevant appraisal guidelines and as a result, they should repurchase the affected loans because they have breached their representations and warranties. If they assign the Standard and Poor's documentation code "Z" to a loan, which requires full documentation, while in fact they have not conducted any income verification, again they should repurchase the loan because they have warranted that the information on the loan tape is accurate. The same is true if they have originated any loan in breach of any law or regulation. However, if a loan defaults because it has a very high loan-to-value ratio or if the borrower did not have a job and borrowed a NINJA loan, the blame should be on the rating agencies or the investors themselves.

When the credit crisis broke out, rating agencies strongly defended the integrity of their rating models.[154] Today, there is no question that the rating models simply failed. As of the end of 2008, S&P had downgraded 1.21 trillion out of about 3.27 trillion in original issuance of securities issued between the first-quarter of 2005 and the third quarter of 2007. An additional 9% is on negative watch. For these securities about 2% have defaulted and 7.6% is currently rated as CC or lower. The securities that were downgraded from investment-grade to speculative-grade account for about 65% ($791 billion) of the

[154] See Vickie Tillman, Don't Blame the Rating Agencies, Wall St. J., Aug. 31, 2007, At A9. See also Standard & Poor's, *supra* note 60.

downgrades in original issuance volume.[155] The total downgrades by Moody's are not available but reportedly one time in early 2009, Moody's downgraded $59 billion of AAA-rated securities and 91% of them went straight to junk status.[156]

It seems that not all mistakes rating agencies have made are honest ones as they have claimed.[157] The SEC conducted an examination on rating agencies in 2008 and found a number of weaknesses in rating agencies' business development, internal control and disclosure practices.[158] Many criticisms targeted their issuer-pay compensation model and alleged conflicts of interests.[159] Although there are only three rating agencies in the market, they have to reach roughly the same conclusion or else no issuer will use their services.[160]

There are also evidences suggesting that their rating models have apparent deficiencies and they have/should have noticed. Many of the mortgage products are recent innovations in the market so there is virtually no performance history for them. The Alt-A industry grew out of almost nothing in a few years and Moody's even had to rely on prime loan performance data to model Alt-A loans initially. Subprime loans were transformed so much that they became fundamentally different from those subprime loans originated in the early 1990s. Rating agencies have known all these and should have realized that their models have limitations and they should have rejected some loans because they could not find a

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[155] See Standard & Poor's, *supra* note 131.
[156] See ___, *Move Over, Subprime*, Economist, Feb. 7, 2009.
[157] See Aaron Lucchetti, *Rating Game: As housing Boomed, Moody's Opened Up*, Wall St. J., Apr. 11, 2008, At A1.
[158] See Securities Exchange Commission, *Summary Report of Issues Identified in the Commission Staff's Examinations of Select Credit Rating Agencies*, July 2008, http://www.sec.gov/news/studies/2008/craexamination070808.pdf.
[159] See, for example, Frank Partnoy, *How and Why Credit Rating Agencies Are Not Like Other Gatekeepers*, FINANCIAL GATEKEEPERS: CAN THEY PROTECT INVESTORS?, Yasuyuki Fuchita, Robert E. Litan, eds., Brookings Institution Press and the Nomura Institute of Capital Markets Research, 2006; San Diego Legal Studies Paper No. 07-46. Available at SSRN: http://ssrn.com/abstract=900257.
[160] See Aaron Lucchetti, *Rating Game: As housing Boomed, Moody's Opened Up*, Wall St. J., Apr. 11, 2008, At A1 (Reporting that Moody's rated less mortgage bonds than S&P and Fitch because its standards were considered more difficult.). See also Aaron Lucchetti, *Ratings Firms' Practices Get Rated – SEC Probes if Conflicts Fueled Subprime Troubles*, Wall St. J., Sept. 7, 2007, At C1. (Reporting that Moody's market share dropped to 25% from 75% in rating commercial mortgage deals after it increased standards.)

rating basis for these loans.[161] Their rating models might have not really embodied the existing worst-case scenarios. For example, Fitch deliberately excluded the 2000 vintage data when building its ResiLogic model and considered 2000 as an exception. Lastly, their entire rating approach – using historical data to predict the future – might be inadequate. They should have also considered the unthinkable and used scenario-building techniques routinely employed by insurance actuaries to analyze more possibilities.[162]

3. Investment Banks and Information Brokerage

In the non-agency market, investment banks play the key intermediary role by linking the supply side of the market, mortgage loan originators, with the demand side, institutional investors, through the conversion of mortgage pools into securities. One could easily believe that they will assume the same gate-keeping role in this market as they allegedly assume in the equity and bond markets. Paul Muolo, an editor of *National Mortgage News*, recalled what Angelo Mozilo, the chairman of Countrywide, thought of Wall Street.[163] In response to Mr. Muolo's book on the savings and loans crisis, Mr. Mozilo lobbied him that the criminality inherent in the thrift mess could never happen in the world of residential mortgage banking, where loans were securitized into bonds and sold in the market. "The capital markets are the regulator in our business. Wall Street would snuff it out." He believed that Wall Street firms were the gatekeepers between the lenders and the institutional investors and it was in their best interests to keep everything clean, to promote honesty and integrity.

A. Exposures of Investment Banks to the Non-Agency Mortgage Business

How good a gatekeeper investment banks can be depends on the extent of their exposures, legal, economic and reputational, to the non-agency mortgage business. The

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[161] See Roger Lowenstein, *Triple-A Failure*, N.Y. Times, Apr. 27, 2008, Sec. MM, P. 36. (Reporting that Moody's discovered that some factors were no longer good predictors of default anymore, e.g. FICO scores and first mortgage amount.)
[162] See ___, *Next Year's Model?* Economist, Mar. 1, 2008.
[163] See Muolo and Padilla, *supra* note 18, Introduction.

reputational exposure has been stressed by many defenders of the Wall Street. It has been argued that no financial institution would knowingly want to make or securitize a loan that it expects would later go into default.[164] If an RMBS issuance later goes sour, the investment bank involved will inevitably get blamed by its clients. In any event, it is fair to conclude that reputational control does not seem to have done a good job. Investment banks also have significant economic exposure to the business as they are large purchasers/aggregators of mortgage loans, warehouse lenders to originators, purchasers and market-makers of RMBS securities, CDOs and other products.

With regard to legal exposure, one difference between investment banks' role in the non-agency market and equity and bond markets is that their role in the non-agency market is multi-faceted. If we disregard the differences between traditional independent investment banks and financial conglomerates such as JPMorgan and Citibank and consider them both to be "investment banks", investment banks have four different types of exposures in RMBS transactions.

Figure 25 2006-2007 Public Non-Agency RMBS Issuance By Transaction Type

	2006			2007		
	Prime	Alt A	Subprime	Prime	Alt A	Subprime
Type B Transactions	41.70%	35.20%	29.33%	39.73%	35.27%	24.55%
A-3 and A-4 Transactions	17.57%	39.12%	50.68%	10.34%	31.82%	38.98%
A-1 Transactions	17.84%	2.95%	14.70%	27.73%	5.02%	22.20%
A-2 Transactions	22.88%	22.73%	5.28%	22.20%	27.89%	14.26%

(Source: SEC filings, author's own calculation)

The first type of exposure only involves their traditional underwriting business (i.e. Type B transactions). An unaffiliated originator or sponsor puts up a pool of mortgages (self-originated or purchased) and engages an investment bank or an underwriting syndicate to underwrite the RMBS issuance. In this scenario, an investment bank only plays the classic

[164] See Michael Hudson*: Debt Bomb – Lending a Hand: How Wall Street Stoked The Mortgage Meltdown – Lehman and Others Transformed the Market For Riskiest Borrowers*, Wall St. J., Jun. 27, 2007, At A1. (Quoting head of securitized products of Lehman Brothers in a senate hearing.)

underwriting role and assumes underwriter liabilities under the Securities Act of 1933 subject to the due diligence defense.[165]

The second type involves an investment bank buying the entire underlying mortgage pool from one or multiple unaffiliated originators and acting as the sponsor and depositor of the transaction (i.e. Type A-3 and A-4 transactions). The sole or lead underwriter will be the investment bank itself. Of course the roles of sponsor, depositor and underwriter are likely to be played by different affiliates within the same corporate group.

In these transactions, the underwriter will assume underwriter liabilities subject to the due diligence defense. The sponsor will assume contractual liabilities if any of the representations or warranties it makes under the sale and purchase agreement between the sponsor and the depositor is breached. However, the sponsor are protected by the same representations and warranties provided by the originators under their sale and purchase agreements and will only suffer losses if the originators fail to perform.

The depositor will assume issuer liabilities under federal securities laws. However, since depositors are set up only for the convenience of shelf registration and do not have meaningful assets, it is very likely that in any securities litigation, plaintiffs will invoke Section 15 of the Securities Act of 1933 and require controlling persons of the depositors, which will typically include sponsors (as shareholders of the depositors) and other entities that may be deemed as controlling persons, to assume joint and several liabilities with the depositors.

Controlling persons under Section 15 can exonerate themselves if they can establish the defense that they have no knowledge or reasonable ground to believe in the existence of the facts by reason of which the liability of the controlled person is alleged to exist.[166] Theoretically one can design a system under which the sponsor acts only as a booking entity

[165] Securities Act of 1933, §11.
[166] Securities Act of 1933, §15.

and does nothing when it purchases mortgage loans from unaffiliated originators. All the due diligence will be carried out by the depositor when the depositor purchases the same pool of mortgage loans from the sponsor, which will happen very shortly after or in conjunction with the purchase by the sponsor from unaffiliated originators. An arrangement may be made between the sponsor and the depositor that the depositor will not release any due diligence information to the sponsor so the sponsor is always kept in the dark. Under such an arrangement, the sponsor in fact knows nothing about the loans it buys and sells but it knows that the depositor is doing the due diligence not for itself but for the economic interest of the sponsor, as the depositor has only minimum assets.

Information on the operations of sponsors and depositors prior to securitization is not required to be disclosed. As a result, it is not clear whether such a mechanism has actually been utilized. It is also questionable whether courts will simply disregard any arrangements between the sponsor and the depositor and require an entity with real assets rather than a dummy to assume the strict issuer liabilities. This issue is likely to be resolved by court through on-going RMBS securities litigations.

The third type is a one-stop transaction (i.e. Type A-1 transactions). Mortgage loans are originated, pooled, securitized and sold all by different affiliates within the same corporate group. As the 2006 and 2007 data shows, there are few Type A-1 transactions in the Alt-A area. Most of the transactions in the prime jumbo area are conducted by three financial conglomerates, Bank of America, JPMorgan and Washington Mutual. Transactions in the subprime area are mainly the result of vertical integration. Roughly half of the transactions are conducted by subprime lenders (e.g. Countrywide and large commercial banks) with the assistance of their securities affiliates and the other half by investment banks with their own subprime lending arms. The nature and scope of liabilities of investment banks in these transactions as roughly the same as their liabilities in the second type of transactions. The difference is that it will be very difficult, if ever possible, for them to establish underwriters' Section 11 defenses and controlling persons' Section 15 defenses as essentially the securities are the products of co-operations amongst different units of the same group.

The fourth type of exposure is a mixture of the second and the third types (i.e. Type A-2 transactions). In these transactions, some of the mortgage loans are originated by the sponsor itself or its affiliate while some others are purchased from unaffiliated third parties. The exposure is likely to be bifurcated as a result with one part following the treatment of the second type of transactions and the other following the treatment of the third type of transactions.

To summarize the analysis above, an investment bank's involvement in any RMBS transaction is likely to be composed of three parts:

First, to maximize its economic gain, the investment bank must maximize the sales proceeds from selling the RMBS securities through slicing and dicing the mortgage pool in the most efficient way. In Type B transactions, the investment bank's remuneration is tied to the sales proceeds. In Type A transactions, the bank will book the difference between such sales proceeds and the origination costs (in case of self-originated loans)/the purchase price (in case of purchase from third parties) as profit. Because the investment banks' interests are closely tied to rating models, naturally they are interested to understand the rating models and find out what loans enjoy the most favorable treatments.[167] However, they may not want to challenge the models themselves, especially when these loans seem to have been overvalued.

Second, in Type A transactions only, the investment bank must control its potential liabilities for replacing mortgage loans breaching relevant representations or warranties. With regard to self-originated loans, the bank may do so through implementing internal control

[167] See Nomura, *Report from Boca Raton 2005: Coverage of Selected Sessions of ABS East 2005*, 20 September 2005, http://www.adelsonandjacob.com/pubs/ABS_East_2005_Notes.pdf , 7.

measures. With regard to loans purchased from unaffiliated third parties, it may conduct due diligence on the mortgage loans by itself and closely monitor the financial health of the sellers.

Third, the investment bank must ensure that there is no material misstatement or omission of material information in the disclosure documents. The structural information, such as how the securities are structured and what the payment terms are, does not require verification at all since it is merely a summary of contractual terms. The investigation is limited to (1) information about transaction parties and (2) mortgage pool data. Required information about most transaction parties is quite generic and requires relatively low level of verification. As a result, the investigative efforts are likely to be concentrated in verifying the accuracy of mortgage pool data and due diligence on originators and their origination practices.

B. Due Diligence Practices Relating to Mortgage Pool Data

Liabilities can be avoided or controlled through due diligence investigations. Although the current RMBS securities litigations have generally not advanced to the discovery stage and as a result, there is not much information available on investment banks' actual due diligence practices, one may have a glimpse of what might have been done based on information pieced together from various sources.

However, the more important question, i.e. what due diligence standards should be applied, remains to be answered. Do underwriters satisfy their due diligence obligations by only ensuring tape-to-file integrity, i.e. whether the information presented on loan tapes/prospectus supplement matches with the information in the relevant mortgage files, or do they have an obligation to investigate into the so-called "file-to-reality" integrity, i.e.

whether the mortgage files reflect the true credit risks of the borrowers?[168] For example, do they need to check whether the property appraisal value stated in the appraisal form can be justified on reasonable ground? Is the loan data "expertised portion" of the prospectus supplement so underwriters have a qualified reliance on accountants? Do different due diligence standards apply based on the source of the loans? These are all important issues courts need to consider before they finally reach a conclusion on the appropriate due diligence standards.

(1) AUP Letters

Unlike in equity or bond offerings, accounting firms in RMBS issuances do not play auditor roles and do not sign or assume statutory liabilities for any financial reports. At the issuance stage, accounting firms are normally engaged to perform certain agreed upon procedures and issue "comfort letters" or "agreed-upon procedures letters" ("AUP letters") to the underwriters.[169] Typically an accounting firm would randomly or adversely select a specified percentage of the mortgage loans in the mortgage pool and compare the data presented on the loan tape with the records kept by the sponsor. The purpose is to ensure that the loan tape data "agrees wit the records of the company", as the relevant contracts often put it. To verify the statistical information in the free writing prospectus, the prospectus and the prospectus supplement, similar procedures are carried upon by the accounting firm. All the procedures to be conducted by the accounting firm are specified in the engagement agreement. The accounting firm has no obligation to conduct procedures beyond those specified in the agreement[170], nor will the accounting firm guarantee the sufficiency of the procedures. The AUP letters and the relevant engagement agreements are not required to be disclosed to investors so it is not clear what the exact agreed-upon procedures are. However,

[168] See Standard & Poor's, *RMBS: Incorporating Third-party Due Diligence Results Into the U.S. RMBS Rating Process, Nov. 25*, 2008.
[169] General AUP engagement standards can be found at the website of the American Institute of Certified Public Accounts at http://www.aicpa.org/download/members/div/auditstd/AT-00201.PDF.
[170] Id., §40.

it seems that the review by accounting firms is mainly for the purpose of ensuring tape-to-file integrity.

(2) Substantive Due Diligence Reviews

The formal review by accounting firms is unlikely to identify substantive issues with the mortgage loans. Another practice is to engage a third-party due diligence firm, or an internal unit of the sponsor, to conduct a qualitative and quantitative review of the mortgage loan files. The reviewer would typically sample a specified percentage of the mortgage loans in the mortgage pool. The mortgage loans may be selected randomly or only from loans with high risks. The standard practice is to select 10% of the loans from the mortgage pools,[171] although it was reported that firms had been evaluating as few as 5 percent of loans in mortgage pools they were buying by 2005, down from as much as 30 percent at the beginning of the decade.[172] According to the American Securitization Forum, this type of report typically focuses on compliance with laws and regulations (e.g. federal laws such as the Truth in Lending Act and the Real Estate Settlement Practices Act as well as state and federal predatory lending laws), as well as compliance with the originator's underwriting standards. Similar to AUP letters, these due diligence reports are never disclosed to investors. Due diligence firms may charge about $150 dollars for evaluating one loan. [173] Another report indicates that the price may be as high as $ 350 dollars per loan.[174]

The due diligence firms assisting investment banks in conducting these investigations were the first to be investigated at the beginning of the credit crisis.[175] In order to investigate whether investment banks had been withholding information from investors, New York State

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[171] See Becky Walzak, *Modernizing Quality Control*, Mort. Banking, May 1, 2006, 100. (Providing description of the due diligence process.)
[172] See Vikas Bajaj & Jenny Anderson, *Inquiry Focuses on Withholding of Data on Loans*, N.Y. Times, Jan. 12, 2008.
[173] See Amir Efrati & Ruth Simon, *Due-Diligence Firm to Aid New York Subprime Probe*, Wall St. J., Jan. 28, 2008, At A2.
[174] See Vikas Bajaj & Jenny Anderson, *supra* note 172.
[175] See Amir Efrati & Ruth Simon, *supra* note 173.

Attorney General gained access to all of the due diligence reports issued by several due diligence firms in early 2008 by granting immunity to these firms. Interestingly there have been no follow-up news reports on the investigation and Attorney General Cuomo has not released his investigation results ever since. The investigation and in particular the remark made by the head of one due diligence firm that investment banks treated them as "plotted plants" and ignored their due diligence reports have been widely cited as evidence that investment banks might not have done proper due diligence on the RMBS securities.[176]

One question that has not been discussed so far is the exact purpose of the due diligence by these firms. Such due diligence has often been discussed in the context of mortgage loan purchases from unaffiliated originators (i.e. in Type A-2, A-3 and A-4 transactions). It must be noted that this is very different from the due diligence required for the issuance of RMBS securities. For example, a legal compliance review is not required for RMBS issuances since there are no representations in the prospectus supplement about the legality and enforceability of the underlying mortgage loans. Rather such representations are made by the sponsor in the sale and purchase agreement and the exclusive remedy for breach is substituting the breaching loans with conforming ones. It seems that at least a part of such due diligence is for the benefit of investment banks to control their contractual liabilities as sponsors of the transactions. Legally they are free to ignore any findings by the due diligence firms at their own peril. One reason sponsors may ignore negative findings is that they do not want to lose deals, especially when the mortgage loans are auctioned by originators and the next bidder is willing to do so.[177] They may choose to deal with any actual breaches when they have been identified in the future. As discussed in Part II of the paper, actual breaches may never be found. They may also rely on the fact that they can invoke similar provisions under their agreements with originators.

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[176] Id.
[177] David Cho, *supra* note 143. (Reporting that one unnamed investment bank regularly lost New Century deals because its more stringent due diligence standards.)

There are still a lot of unanswered questions about this type of due diligences. First, in Type A-2, A-3 and A-4 transactions, mortgage loans will be transferred for three times, i.e. from unaffiliated originators to sponsors, from sponsors to depositors and from depositors to investors in the form of RMBS securities. It is unlikely that a separate due diligence report is commissioned each time a transfer occurs, since sponsors, depositors and lead underwriters in these transactions are all affiliated parties. It may be possible that due diligence is conducted only once and the other two transactions rely on the same report. However, it is not clear which of the sponsor, the depositor and the underwriter is typically the official party commissioning such reports.

In addition, it is not at all clear whether such due diligence is conducted at all in other types of transactions. In Type A-1 transactions, originators, sponsors, depositors and lead underwriters are all affiliated parties. It is unlikely that a third-party due diligence firm will be engaged to conduct such due diligence at all, since they can rely on their internal quality control procedures.

In Type B transactions, investment banks provide securities underwriting services to unaffiliated sponsors. It is unlikely that they will require a legal compliance review as they will not act as sponsors of the transactions. Do they require a due diligence review of mortgage loan files in addition to receiving an AUP letter from the accounting firms? There is doubt whether such due diligence reviews have actually been conducted at all.

The author reviewed the transaction documents for a sample of seventeen Type B-1 issuances in 2006.[178] Although the size of the sample is quite small, each of the seventeen

[178] The seventeen issuances are: Accredited Mortgage Loan Trust 2006-2, American Home Mortgage Assets Trust 2006-3, Argent Securities Trust 2006-W2*, Alternative Loan Trust 2006-25CB*,First Horizon Mortgage Pass-through Trust 2006-4, Fremont Home Loan Trust 2006-C, Impac Securities Assets Trust 2006-3, Indymac Indx Mortgage Loan Trust 2006-AR21*, Long Beach Mortgage Loan Trust 2006-2, New Century Home Equity Loan Trust 2006-1, NovaStar Mortgage Funding Trust, Series 2006-5, Option One Mortgage Loan Trust 2006-3, PHHMC Series 2006-2 Trust, Renaissance Home Equity Loan Trust 2006-2, RAAC Series 2006-SP3 Trust*, Saxon Asset Securities Trust 2006-1, and Wells Fargo Mortgage Backed Securities 2006-AR13 Trust. The ones with "*" did not disclose the text of underwriting agreements.

issuances was randomly selected from the Type B-1 issuances by one of the seventeen issuers that conducted practically all of the Type B-1 transactions in 2006. Underwriting agreements were disclosed in thirteen of the seventeen transactions. All disclosed underwriting agreements listed the delivery of satisfactory 10b-5 letters by legal counsels, which as usual, do not cover verification of financial, numerical and statistical information in the disclosure documents, and AUP letters by accounting firms as condition precedents to the effectiveness of the underwriters' obligations under the agreements. None of these fourteen underwriting agreements indicated the existence of due diligence reports prepared by due diligence firms. It would seem strange, although not completely impossible, that underwriters would actually require such due diligence reviews but do not condition their underwriting obligations upon receiving satisfactory reports.

C. Descriptions of Underwriting Standards

Under Regulation AB, issuers are required to identify originators contributing 10% or more of the mortgage pool in the prospectus supplement and provide a description of the underwriting practices of originators contributing 20% or more of the mortgage pool. The descriptions of underwriting standards have been at the center of current RMBS securities litigations. In a typical complaint filed by RMBS investors, the plaintiffs will quote certain portions of the descriptions and compare them with news reports and research reports on poor underwriting practices. The plaintiffs will then argue that the descriptions in the prospectus supplement must be misleading and their discovery demands should be granted. [179]

(1) Description of Study

The author conducted a study on the disclosure practices relating to subprime RMBS securities issued in 2006 and 2007 to examine (1) how underwriting standards were generally

[179] For sample complaints filed with courts, see a list of court cases in Ferrell, Allen, Bethel, Jennifer E. and Hu, Gang,Legal and Economic Issues in Litigation Arising from the 2007-2008 Credit Crisis(November 17, 2008). Harvard Law and Economics Discussion Paper No. 612; Harvard Law School Program on Risk Regulation Research Paper No. 08-5. Available at SSRN: http://ssrn.com/abstract=1096582.

disclosed; and (2) whether over the two-year period, there were any changes to the descriptions of underwriting standards of the same originator. For this purpose, prospectus supplements of all subprime RMBS securities publicly issued in 2006 and 2007 were retrieved from the SEC EDGAR filing system. As mortgage loans might be securitized by the originators themselves or by unaffiliated sponsors purchasing such loans from the originators, descriptions of the underwriting standards of one originator would end up in disclosure documents of different issuers. All of the descriptions of underwriting standards were extracted from these prospectus supplements. They were then saved in separate files and categorized by the identities of the originators.

In total, descriptions of underwriting standards of more than 60 subprime originators appeared in these disclosure documents. Among these originators, descriptions relating to 36 of them appeared more than four times during the two-year period. The list of these originators appears is attached to this paper as Appendix 6. In the list, the originators are ranked in accordance with their number of appearances. The number of issuers involved in securitizing each originator’s loans is set out in the third column of the list. With regard to each of the 36 originators, the author compared the descriptions from different issuances relating to that originator using the comparison function of Microsoft Word to see whether and how the descriptions were changed during the two-year period.

(2) Study Results

The results of the study are as follows:

First, a description of underwriting standards often consists of two parts. One part is a description of the underwriting practices observed by the originator, e.g., how the originator selects the FICO score for underwriting purposes, examines the income documents, and conducts property valuation. The second part is an underwriting matrix, which sets out the specific requirements for each type of loans. A sample description of Countrywide’s underwriting standards is included in Appendix 6. For all of the 36 originators, the descriptive parts generally remained unchanged at all over the two-year period. Updates were usually relating to a new origination program of an originator or, at the later stages, lawsuits filed against the originators or information on their bankruptcies. The underwriting matrix was updated during this period by changing the specific requirements, for example, increasing the loan-to-value ratio limit of one type of loans from 80% to 90%.

Second, if one compares the description of underwriting standards of one originator with that of another originator, one probably could not see substantial differences between the descriptions for different originators except for the contents of the underwriting matrix. The descriptive languages were usually very general. Readers often could only know that the originator would pull credit reports, examine employment and income files and conduct property appraisals but the exact standards and procedures were generally not disclosed. Certain statements on underwriting practices often appeared in the descriptions relating to different unaffiliated originators with only unsubstantial wording changes. For example, compare the following languages describing quality control procedures of two unaffiliated originators:

> "The Originator conducts a number of quality control procedures, … including post funding compliance audits as well as a full re-underwriting of a random selection of loans to assure asset quality. Under the post-funding audits, a random sample of loans are required to be reviewed to verify credit grading, documentation compliance and data accuracy. Under the asset quality procedure, a random selection of each month's acquisitions must be reviewed by the Originator. The loan review is required to confirm the existence and accuracy of legal documents, credit documentation, appraisal analysis and underwriting decision. A report detailing audit findings and level of error is sent monthly to each branch for response. The audit findings and branch responses must then be reviewed by the Originator's senior management. Adverse findings are to be tracked monthly and over a rolling six month period. This review procedure allows the Originator to assess programs for potential guideline changes, program enhancements, appraisal policies, areas of risk to be reduced or eliminated and the need for additional staff training." (First Franklin)

> "Fremont conducts a number of quality control procedures, including a post-funding review as well as a full re-underwriting of a random selection of loans to assure asset quality. Under the funding review, all loans are reviewed to verify credit grading, documentation compliance and data accuracy. Under the asset quality procedure, a random selection of each month's originations is reviewed. The loan review confirms the existence and accuracy of legal documents, credit documentation, appraisal analysis and underwriting decision. A report detailing review findings and level of error is sent monthly to each loan production office for response. The review findings and

branch responses are then reviewed by Fremont's senior management. Adverse findings are tracked monthly. This review procedure allows Fremont to assess programs for potential guideline changes, program enhancements, appraisal policies, areas of risk to be reduced or eliminated and the need for additional staff training." (Fremont)

(3) Analysis

It would be fair to say that by reading the existing descriptions on underwriting standards, an investor could not tell the differences between one originator from another one. Indeed the underwriting matrix was updated but investors have already had loan-level information, which simply makes the matrix superfluous. The ensuing question would be: shouldn't underwriters have done a better job?

It seems that underwriters may justify what they have done on several grounds. First, underwriters may also claim, and the descriptions inevitably provide, that the descriptions are only supposed to be a summary and not intended to be comprehensive. All descriptions of underwriting standards provide that originators may grant exceptions to their underwriting standards from time to time based on a variety of factors. Many originators, including Countrywide, WMC, New Century and Fremont, would routinely include in their descriptions that it expects a substantial portion of the mortgage loans would be originated as exception loans. This essentially renders the entire descriptions meaningless. Underwriters could also rely on such disclosure to claim that investors should have known the unreliability of the descriptions in the prospectus supplements.

In many transactions, the mortgage loans were purchased by sponsors through arm's-length transactions from unaffiliated originators. Underwriters could not conduct direct due diligences on originators. In these transactions, the section on underwriting standards would usually provide that the information on underwriting standards is provided by the originator. Some issuers (e.g. JPMorgan and Deutsche Bank) would take one step further and clearly disclose that none of the sponsor, depositor, underwriter and trustee has participated in the preparation of the information or taken steps in investigating its accuracy. It remains to be seen whether such disclaimer would be held effective by courts and if not, whether issuers and underwriters could escape liabilities by relying on Rule 409 of Regulation A, which provides that if any required information is unknown and not reasonably available because it rest peculiarly within the knowledge of another person not affiliated with the registrant, the information may be omitted subject to the condition that the registrant shall give information it possesses or can acquire without unreasonable effort or expense.[180] Issuers and underwriters may argue that they have done exactly what Rule 409 permits.

In addition, as many originators themselves are public companies, they often disclose information on their underwriting practices in their company disclosure documents. Issuers and underwriters may claim that they are entitled to rely on such disclosed information. RMBS securities are offered on a shelf registration basis, therefore underwriters may claim that they should be entitled to expect that certain information has already been examined by the previous underwriter, especially when the last issuance was only one month ago. At last, underwriters may argue that they are following the industry practice as it seems that the entire industry has been doing the same thing with respect to such descriptions of underwriting standards. It will be interesting to see how courts would respond to the arguments above and decide whether some underwriters/issuers are liable for failing to disclose specific information on origination practices.

[180] 17 C.F.R. 230.409.

Part V Reform Proposals and System Redesign

1. Should the Existing System Be Revived?

The non-agency RMBS market has effectively been closed since the second half of 2007 with virtually no new Alt A or subprime issuances ever since. The question in this market is not how to reform the existing system, but whether and how to revive the non-agency market again.

There are serious doubts whether this market should be revived at all. In theory, the capital market is better at financing residential mortgage loans than financial institutions because the market is able to absorb more risks than individual firms. As a result, more borrowers are able to borrow money at a cheaper price. However, it is questionable whether investors have ever done their own credit analysis before they invest in mortgage-backed securities. In the agency market, the GSEs take care of the credit risks. In the non-agency market, the popular view is that without the AAA ratings assigned by the rating agencies, the RMBS securities would be barely marketable. [181] After the rating agencies' models failed, the market has been struggling for more than a year to reach a consensus on the price of the "toxic assets" of the credit crisis. Some of the investors in the non-agency market definitely have the capabilities to build their own models and make their own credit judgments. The number of such investors will never be on the high side though, since evaluating the performance of a mortgage pool might actually be more difficult than evaluating an operating company as it involves cracking tons of historical data and expensive model building. One may have to wonder what most investors are supposed to do other than relying on rating agencies' models after the non-agency market is revived. If the rating agencies fail again, the market will again be thrown into turmoil.

[181] See Neil D. Baron, The Role of Rating Agencies in the Securitization Process in in A PRIMER ON SECURITIZATION (Leon T. Kendall & Michael J. Fishman eds., 2000), 83.

The credit crisis has demonstrated that overexpansion of homeownership may bring about unwanted consequences. Many borrowers in the non-agency market might have been better off if they had not borrowed those Alt A or subprime loans in the first place. If one agrees that the credit crisis is the result of a bubble economy, there is no reason why the origination volume of non-agency loans should not be reduced to its pre-2000 level, i.e. less than 10%-15% of total mortgage origination. Even if there are still legitimate borrowing needs the agency market could not satisfy, lenders could use their own balance sheets to finance them or the government could help by expanding the current FHA/VA system. If an originator wishes to securitize its loans, it may purchase bond insurance or use other external credit enhancement techniques, just as what they had been doing until six or seven years ago.

Several reforms have been implemented or proposed since the credit crisis broke out. A brief overview of each proposal is set out below, followed by the author's analysis.

2. Skin in the Game

To solve the problem that originators do not have a long-term financial interest in the mortgage loans they originate, one proposal is to require RMBS issuers to retain a portion of the securities they issue, for example, 10% of the total issuance, and possibly consisting of the junior tranches. [182] The proposal was made by European think tanks[183] and became popular with key legislative figures including Representative Barney Frank.[184]

This "skin in the game" proposal has its undeniable appeal for simplicity and apparent effectiveness. It can also be seen as a variation of the popular bonding mechanism in the corporate world, where senior managers are not paid in cash only but also in shares so that their personal interest will be aligned with that of the corporations they serve. However, the

[182] See Liz Rappaport and Carrick Mollenkamp, *Crisis on Wall Street: Banks May Keep Skin In the Game*, Wall St. J., Feb. 10, 2009, at C3.
[183] See Liam Pleven and Susanne Craig, *Deal Fees Under Fire Amid Mortgage Crisis – Guaranteed Rewards of Bankers, Middlemen Are in the Spotlight*, Wall St. J., Jan. 17, 2008, At A1.
[184] Vincent Reinhart, *Securitization and the Mortgage Mess*, Wall St. J., Jul. 18, 2008, At A13.

proposal seems to have misinterpreted the supply and demand relationships in the non-agency market and may have implementation difficulties.

Under the originate-to-sell model, originators are not supposed to have long-term interests in the mortgage loans they originate. They will originate whatever loans that can sell, no matter how they themselves believe these loans will perform. It is actually exactly because of the nature of their short-term interest in the loans that they should better not be given the power to decide what to originate. Rather the power should stay in the hands of the investors. The "skin in the game"" proposal will change the assumption in the market.

The first problem with this proposal is that it forces originators to take more than credit risks. Prepayment risks, counterparty risks (in case derivatives instruments are used) and other structural risks are all risks that are beyond control of originators. It is simply unfair that these risks are imposed on originators simply because they supply the loans to the market.

The second problem is a practical one. Unlike their European counterparts, many of the non-bank originators/aggregators in the United States rely heavily on short-term debts to finance their operations. They may be financially restrained to hold a lot of long-term securities on their own balance sheets. As a matter of fact, one of the reasons some originators sell whole loans in the whole loan market instead of securitizing them is that they do not have to keep unrated retained interests on their balance sheets. If they do issue RMBS securities, they are likely to bundle these retained interests and re-securitize them as net interest margin securities. The carrying cost is particularly high, considering that many originators even borrow in the market at a higher rate (e.g. a BBB-rated company) than the securities they are required to retain (e.g. A-rated RMBS securities). If the transaction cost is too high, originators will simply stay in the agency market. They may also originate FHA/VA loans, which compete with below-prime loans in the non-agency market.

The third problem is also a practical one. Exactly whose skin do we want in the game? The non-agency market is a multi-layered origination system in which loans are solicited at the bottom by brokers and correspondent lenders and gradually aggregated by some large originators. Before securitization, loans may change hands again via the whole loan market. More often than not issuers are securitizing loans they have purchased from unaffiliated third parties. Do we only want the ultimate issuers to keep the RMBS securities? If so, the ultimate issuers may be less willing to securitize other people's loans. In particular, the largest issuers are usually sophisticated financial institutions that may want to have a much higher rate of return than most RMBS securities could offer. They will simply find the RMBS business unattractive and leave the market. If we want all the participants at different levels have some skin in the game, how can this be done? Requiring all the originators in an RMBS issuance to be paid in part with RMBS securities are not feasible as good originators will unfairly share losses caused by bad originators.

The fourth problem is whether we should ever trust originators with their long-term views on the mortgage market. If originators are required to have skin in the game, there will be inevitable reliance on their judgments because investors will believe that they and the originators are on the same boat and originators have an informational advantage over themselves. Some originators may have some unrealistically rosy view about the future of the market and originate bad loans even if they know they will also be required to hold a portion of them. The current credit crisis is actually the best illustration of this point. Originators always had some skin in the game – if their loans turned sour or if the market collapsed, they would be forced to close their doors. As a matter of fact, this is exactly what has happened since the collapse of the market. However, they still went ahead and originated many poor loans anyway, probably because they simply did not care or they believed that the real estate market would grow forever. Should investors trust their judgments again this time because originators are now officially in the same boat with them?

3. Project RESTART

Project on Residential Securitization Transparency and Reporting ("Project RESTART") was launched in July 2008 by the American Securitization Forum ("ASF"), a securitization trade group affiliated with the Securities Industry and Financial Markets Association. The purpose of Project RESTART is to restore investor confidence in mortgage and asset-backed securities by revamping the entire mortgage securitization process. The initial phases of the project include enhancements in the following aspects:[185]

- ASF RMBS Disclosure Package – a standardized disclosure package to provide more data than currently available to investors about the underlying mortgage loans;
- ASF RMBS Reporting Package – a standardized reporting package that provides updated information on underlying mortgage loans after securitization;
- Representations and Warranties – development of model RMBS representations and warranties;
- Repurchase Procedures – development of a uniform set of procedures, including the use of post-securitization forensic reviews, for enforcement of model RMBS securitization representations and warranties;
- Due Diligence – development of standards for pre-securitization due diligence, including originator reviews;
- Model Servicing Provisions – development of more standardized rules for servicers;

[185] See Project RESTART Request for Comment, http://www.americansecuritization.com/uploadedFiles/Project_RESTART_RFC_%207_16_%2008.pdf, 3-4.

ASF issued the first deliverable, ASF RMBS Disclosure Package, in July 2008 for public comments.[186] The disclosure package is in the form of a loan tape layout consisting of 135 data fields such as originator's name, loan amount, FICO score and property value. Each data field has its corresponding definition in the glossary so issuers will know how to fill out the fields. For example, a specific code is assigned to each property type that may be used as collateral. Reportedly these 135 data fields were chosen from more than 400 data fields. Some were taken out because of privacy concerns, such as nine-digit zip codes of property locations.[187] Some were because of the difficulty to standardize, such as reasons an originator grants an underwriting exception. In February 2009, ASF issued an updated version of the disclosure package incorporating comments received from industry participants.[188] The existing data fields were further expanded. In addition, new data fields for manufactured housing loans and modified loans were added. Along with the second version of the disclosure package, ASF also released the first version of the ASF RMBS Reporting Package for public comments.[189] The reporting package is also in the form of a loan tape layout and consists of almost 200 data fields on post-securitization mortgage pool performances such as servicer ID, servicing fees, default reasons, etc.

The updated version of the disclosure package is presented in the table in Appendix 4 under "RESTART". The key data fields required by Project RESTART, as Appendix 4 shows, are not that different from the existing data fields that have been required by rating agencies' rating models. Project RESTART does require more detailed information in three aspects, i.e. property appraisal value, FICO scores and borrower's income. Both original and most recent property appraisal values are required. Borrowers' all FICO scores from all credit

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[186] Id.
[187] See Aaron Lucchetti, *Moving the Market: More Data on Mortgage Bonds Sought*, Wall St. J., Jul. 16, 2008, At C3.
[188] Project RESTART Request for Comment, http://www.americansecuritization.com/uploadedFiles/ASF_2_9_09_RESTART_RFC.pdf.
[189] Id.

bureaus are required to be reported and while in the past only one was reported by following certain selection convention (i.e. generally reporting the lower one). In addition, all borrowers' incomes and assets are required to be reported. Project RESTART has also designed more complicated coding systems for many of the data fields than what rating agencies have required. For example, the disclosure package recognizes 18 different types of property valuation methods (some for manufactured housing only) and 37 property types.

There is no doubt that investors will benefit from standardized disclosure practices. Although investors did generally have access to loan-level data, understandably the disclosure practices were less uniform amongst issuers, which might have made it difficult for investors to compare products issued by different issuers. However, one must be cautionary about the immediate benefits from such enhanced disclosures.

First, as Appendix 4 shows, the majority of the data fields in the disclosure package have already been required by rating agencies for a few years so the disclosure package is more like a technical improvement rather than a ground-breaking change.

Second, and perhaps this is the fundamental problem with the enhanced disclosure practices, both investors and rating agencies do not have comparable historical data. Investors may now have more information about the underlying mortgage pools but any pricing model built upon historical mortgage loan data will not consider these newly known factors because it is not known how historically such factors have affected the performance of mortgage loans. Eventually investors are just left with a large volume of information that they do not really know how to use. They can make some rough adjustments based on instincts, for example, if two mortgage pools have similar FICO score distributions but one pool consists primarily of loans with Next Generation scores while the scores for the other pool are still calculated under the old algorithm, investors may conclude that the first pool probably will perform better because the new FICO algorithm eliminates the effect of piggybacking. However, investors still do not know home much the first pool will outperform the second pool because there is lack of historical data. It may be the case that investors will eventually benefit from enhanced disclosures in the long run after a large amount of high-quality data has been accumulated over the years. For the moment, it is unrealistic to expect that investors will automatically get it right after being handed some extra new data they do not know what to do with.

4. Rating Agency's Actions

In addition to massive downgrades of RMBS securities, rating agencies have been actively reforming their own rating practices to win back investor confidence. Some reforms, in particular those relating to conflicts of interest issues, have been pushed by regulators.[190] To address the conflict of interest issue, rating agencies have reorganized their internal structure to separate their business development practices from their rating practices.[191] In the settlement agreement between rating agencies and the New York Attorney General Cuomo, rating agencies agree to charge review fees no matter whether they are eventually hired to rate the deal or not. This is to ensure that they will feel less pressure as they get paid no matter they assign a favorable rating or not. This arrangement is unlikely to have any meaningful impact on the non-agency market though, as rating agencies make available their rating models to market participants. Issuers may check which rating agency will treat their mortgage pools most favorably before they actually retain the agency to provide the rating service.

A lot of the changes have been changes to their rating methodologies. In light of the heavy losses suffered by RMBS securities, rating agencies have significantly increased the

[190] See SEC, *supra* note 158.
[191] See Vickie Tillman, *Standard & Poor's Gives Its Side of Story*, Wall St. J., March 8, 2008, At A3.

loss assumptions in their rating models.[192] As a result, a higher expected loss will be reported on the same mortgage pool after the adjustment. The relative importance of some factors in the rating models has also been changed. For example, Standard and Poor's has announced that its model will be less reliant on FICO scores in light of their decreasing predictive power.[193] All three rating agencies have also revised their loan tape formats to include many new data fields.

One uniform rating methodology change amongst three rating agencies is the new requirements for originator assessments and third party loan-level reviews, which are agreed to by rating agencies in their settlement agreements with Attorney General Cuomo. In the past, rating agencies did not ask for due diligence reports on the mortgage pools even though these reports were available, as they would assume the accuracy of the data presented to them. Their rating models were largely originator-neutral. All rating agencies did all claim that they would review the underwriting practices of the originators before rating the securities. Standard and Poor's even described the due diligence process in detail in its criteria book.[194] However, there was serious doubt whether rating agencies had actually adjusted the rating results based on the perceived strength of the originators. The SEC report indicated that at least one rating agency, likely to be Fitch, had abandoned the practice of reviewing origination practices.[195] The other two rating agencies have not factored originator identities into their rating models but it is not clear at all whether they have made out-of-model adjustments to the rating results and the adjustment standards.

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[192] See, for example, Standard & Poor's, *612 US Subprime RMBS Classes Put On Watch Negative*, July 11, 2007. See also Standard & Poor's, *Standard & Poor's Revises US Subprime, Prime, And Alternative-A RMBS Loss Assumptions*, July 30, 2008.
[193] See Standard & Poor's, *Ratings On 207 US Alt-A RMBS Classes Placed On CreditWatch Negative*, August 7, 2007.
[194] See Standard & Poor's, *supra* note 14.
[195] See SEC, *supra* note 158, 35.

A. Originator Review

Originator reviews are rating agencies' own due diligence reviews on mortgage originators and are conducted separately from ratings of specific RMBS issuances. The three rating agencies all issued special reports detailing their own review criteria and procedures at the end of 2008. These are still rules on paper rather than in action, as new RMBS issuances are still discontinued.

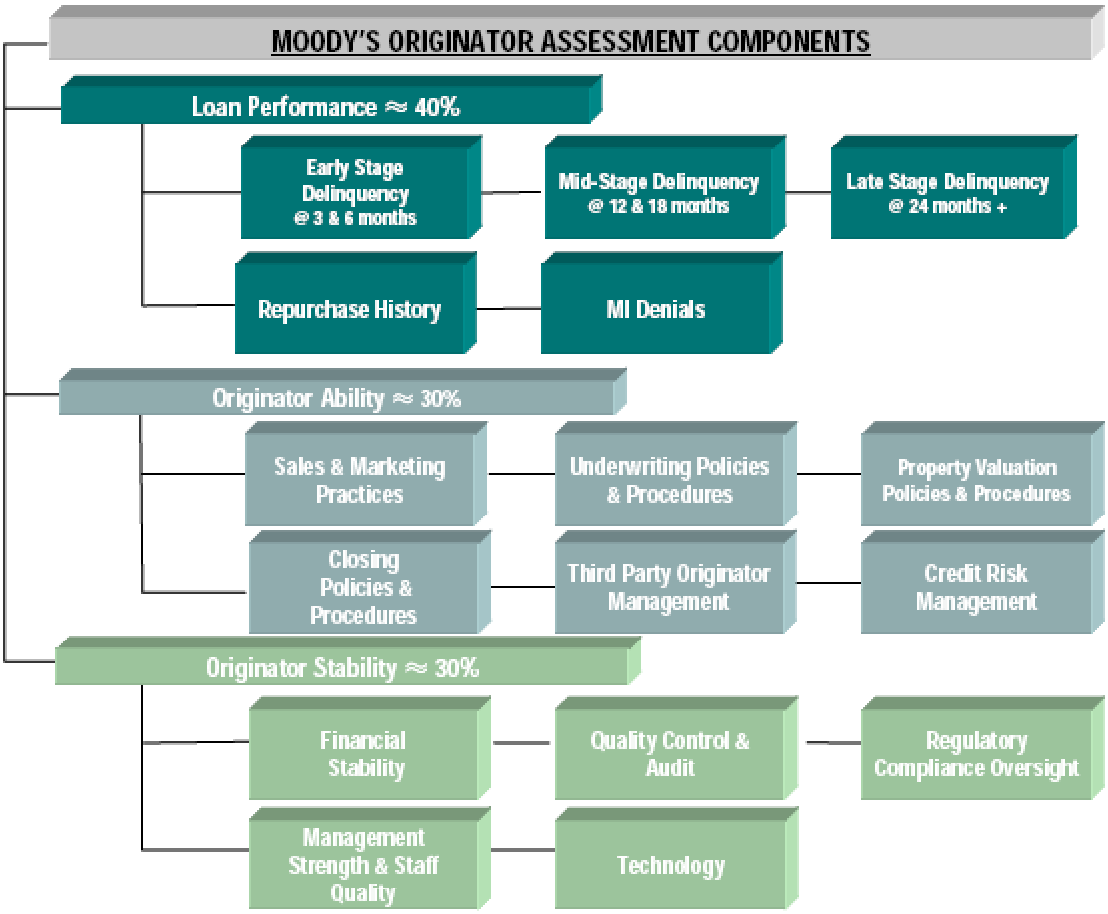
(1) Moody's

Of the three rating agencies, Moody's has published the most detailed report on its originator review practices.[196] The review will generally be conducted on-site every twelve to eighteen months and will be supplemented by quarterly reports from originators and calls with originators about their reports and data trends. The review will be applicable to both originators and aggregators although the focus of the review will be different for them.

Moody's review will consist of three parts. 40% of the result will be based on a review of the historical loan performance, 30% on originator ability and 30% on originator stability. The review components of each of the three parts are illustrated in the chart below.

Figure 26

[196] See Moody's, *Moody's Enhanced Approach to Originator Assessments for U.S. Residential Mortgage Backed Securities*, Nov. 24, 2008.



Moody's has provided the detailed review criteria for each component and will assign an assessment result of "strong", "average", "weak" or "unacceptable" to each component through its review of the originator's policies and procedures as well as onsite inspections and discussions with management. Moody's will aggregate the assessment results for each component and reach an overall assessment level of "strong", "above average", "average", "below average", "weak" or "unacceptable". The originator assessment reports will be published by Moody's on its websites. Moody's has not stated whether and how it will adjust the RMBS rating results based on the identities of the originators.

(2) Standard and Poor's

Standard and Poor's will conduct similar reviews on originators comprising of two parts.[197] The first part is a review of the historical performance of the loans originated by different originators. A ratio will be assigned to each originator and an originator ranking will be compiled and updated semiannually. For originators with no performance history, average performance will be assumed until sufficient performance data exists. In addition to reviewing historical loan performance, Standard and Poor's will review the originator's origination process and guidelines. The focus will be on the following areas:

- Management and organization, including financial strength;
- Risk management;
- Broker/correspondent/retail loan officer management;
- Underwriting;
- Prefunding data quality;
- Post-funding quality control;
- Appraisal/valuation management; and
- Regulatory compliance.

The results from the review of these operational factors will be combined with the ranking based on historical loan performance to reach an overall ranking of originators. Operational factors can override the historical performance and alter the overall ranking of an originator. For instances, a lower overall ranking will be assigned if an originator loosens its lending standards even if the performance of its loans to date has been strong. On the contrary, if an originator tightens its underwriting standards, its ranking might not be increased until several years later, after sufficient performance data demonstrates the positive impacts of the more stringent standards. Based on the final overall ranking, originators will be grouped into three categories: Top Tier (15%), Middle Tier (70%) and Bottom Tier (15%).

[197] See Standard & Poor's, *RMBS: Standard & Poor's Enhanced Mortgage Originator And Underwriting Review For U.S. RMBS*, Nov. 25, 2008.

If an originator is in the Top Tier, the credit enhancement level for its loans may be reduced by up to 30%, or by a factor of 0.70x. If the an originator ends up in the Bottom Tier, the credit enhancement level for its loans may be increased by up to 30% or more, or a factor of 1.30x or more.

(3) Fitch

Fitch has proposed to conduct reviews similar to those of Moody's and Standard and Poor's.[198] The review results will be disclosed in Fitch's presale reports and will also be factored into Fitch's RMBS rating results. Unlike Standard and Poor's, Fitch will assign an internal score to each originator, which will be used to adjust credit enhancement levels in its RMBS rating model.

B. Third Party Due Diligence Review

Until recently rating agencies have been relying on the representations and warranties from RMBS issuers that the data presented to them is accurate. Such representations and warranties are also usually included in those provided by sponsors and a known violation could trigger sponsors' repurchase obligations. Rating agencies, partly due to pressure from Attorney General Cuomo, have proposed to request third party due diligence reviews prior to securitization. Different review standards have been proposed.[199]

(1) Qualifications of Due Diligence Firms

Due diligence firms and due diligence staff must satisfy certain criteria before their reports are accepted by rating agencies. They are generally required to have reviewers with a few years of underwriting experience in the relevant sector, maintain quality control systems and provide training in specific areas. Independence is also a prerequisite. Both Moody's and

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[198] See Fitch, *U.S. Residential Mortgage Originator Review Criteria*, Dec. 2, 2008.

[199] See Standard & Poor's, *RMBS: Incorporating Third-Party Due Diligence Results Into the U.S. S Rating Process*, Nov. 25, 2008. Moody's, *Moody's Criteria for Evaluating Independent Third-Party Loan level Reviews for U.S. Residential Mortgage Backed Securities*, Nov. 24, 2008. Fitch, *Third-Party Loan-Level Review Criteria*, Dec. 2, 2008.

Standard and Poor's will expect attestation from the due diligence firm that it is not under undue influence or coercion from the transaction parties

(2) Sample Selection and Size

Moody's ties its origination review with third party due diligence review. If an originator originates more than 10% of the loans in a mortgage pool, Moody's will conduct a review on the originator. If an originator contributes 10% or less and is not reviewed by Moody's, all the loans from the originator are required to be reviewed by the due diligence firm. In addition, the size of the randomly selected sample should not be smaller than that computed using a 95% confidence level, a 5% precision level and an assumed error rate equal to the higher of the historic error rate for the originator or the minimum rate assumed by Moody's.

Standard and Poor's requires the sample to meet the following standards:

- a minimum of 200 mortgage loans for a subprime deal and 100 for a prime deal to be reviewed;
- more than 10% of the loans for a subprime deal and 5% for prime; and
- the number of loans should achieve a 5% one-tailed level of significance with a 2% level of precision. In addition, the number of loans in the sample will also depend on the estimated error rate.

Fitch's standards are more straightforward:

- For prime deals from established originators and loan programs, the randomly selected minimum sample size is to be the larger of 200 loans or 10% of the pool;
- For subprime/Alt A and all other types, the size is to be the larger of 400 loans or 20% of the pool; and
- If originators or its loan programs have had less than two years of performance history, the sample size should be doubled.

(3) Scope of Review

The scope of review required by each rating agency is roughly the same although different rating agencies have set very different review standards due diligence firms must follow. Fitch's standards are too general to make them comparable with those of the other two agencies.

Borrower Information

Moody's requires that due diligence firms should confirm whether the loan meets the originators' underwriting guidelines or, if not, a reasonable and documented exception was made. They should also examine whether the borrower provided information on her employment, income, occupancy, assets and liabilities and the soundness of ensuing verifications that support that information. Independent verification of such information will be deemed as the most helpful.

Standard and Poor's requires that due diligence firms should verify documentation of the verifications done on occupancy, income, assets and employment information. If a loan is originated under the full documentation program but the lender fails to perform the verification, the credit enhancement level will be increased by 30% or more. If a loan is a stated-income loan, the lender is required to verify the income with the borrower's tax returns. If the lender fails to do so or the tax information does not support the income, a 100% foreclosure frequency will be assumed. In Standard and Poor's opinion, a reasonableness test is simply not sufficient for a stated-income loan.

Property Valuation

Moody's requires that due diligence firms should determine whether the appraised value of the mortgage property is reasonably supported by the appraisal information as well as any other documentation in the mortgage file pertaining to the property value. If the reviewer believes that the true value of the property is more than 10% lower than the appraised value, the reviewer should obtain an AVM value in order to affirm the reasonableness of the property value. If an AVM value cannot be obtained or the AVM value does not suppose the appraised value, the reviewer should obtain an external broker price opinion.

Standard & Poor's requires due diligence firms to scrutinize property appraisal reports and identify any unsubstantiated property values. In addition, the issuer is required to engage an independent valuation firm to perform property valuation reviews on the entire sample using a cascade approach. The first-level review requires the valuation firm to obtain prices from AVMs. If the AVM value is within a 10% variance of the original appraised value, the loan will pass the test. If the variance is more than 10%, a second-level review by ordering a broker price opinion, field review or new appraisal is necessary.

Legal and Compliance Review

All rating agencies require due diligence firms to conduct a legal and compliance review on the sample loans. Moody's requires that if any loan in the sample fails a high cost loan test or a Regulation Z test, the due diligence firm should review the entire loan pool from the originator. Standard and Poor's requires that if violation of any specific regulation is found, the entire loan pool should be reviewed for violation of that specific regulation.

C. Comments

Will rating agencies get things right this time after factoring originator-specific factors in their rating models? Probably no one can answer this question with confidence. No matter whether they have made the right move or not, the incorporation of originator reviews and due diligence reviews in their rating models will create a few problems.

First, in proposing to review originators' practices, rating agencies have assumed that the industry still exists while in effect the market has almost been entirely wiped out. Some of the biggest names in the non-agency market, such as Countrywide, Indymac, Lehman

Brothers, Bear Stearns, New Century and Ameriquest, are no longer with us. Those few survivors are more than eager to let people forget their past and treat the past few years as an anomaly that does not reflect their current operations. In this sense, the performance data in the past five years is completely meaningless and any ranking or performance-based adjustment is simply not feasible.

Second, the rating agencies have greatly increased their work load by doing their own reviews on originators and reviewing reports from third party due diligence firms. Of course they have no problem with the increase as they will charge more fees. However, their virtually unlimited access to originators creates a huge information asymmetry between them and investors, which incentivizes investors to increase their reliance on rating agencies. There is no guarantee that rating agencies won't make mistakes again and if they do, investors will get hurt again. The proposed reviews also make the rating process more subjective than before, giving rating agencies more room to favor one originator/issuer over the other one.

Third, originators may simply not come back to the non-agency market because of increased transaction costs and uncertainties. The agency and the FHA/VA markets still exist and originators can simply carry on the origination-to-sell model by following the origination standards set by the GSEs and the FHA/VA. The ranking system developed by Standard and Poor's and the originator-specific adjustments applied by the other two rating agencies could effectively drive some originators in the bottom out of business because probably no investor is willing to purchase securities backed by originators in the Bottom Tier.

Fourth, by requesting for third party due diligence reviews, rating agencies are doing more than what they have traditionally been doing – credit risk analysis. There is no reason why rating agencies cannot simply assume data accuracy in their analysis and leave the verification issue to securities laws and contractual arrangements. Their request for legal and compliance review is particularly strange because investors are never even supposed to be exposed to legal and compliance risks. It may be true that the existing system is not particularly effective in identifying breaches of representations and warranties but this should not be the job of the rating agencies but should be subject to now contractual arrangements supervised by other parties, for example, the trustee of the issuing trust.

Lastly, the rating agencies are probably the only ones that should but still do not have real skin in the game. Their rating models have failed once but they do not need to bear any financial liabilities. If one agrees that it is good policy never to allow the non-agency market to grow to the size of its peak days and keep it only a small segment of the market, a better policy might be to re-introduce bond insurance into the non-agency market. Private bond insurers, or with the help of the government, may guarantee the credit risks of non-agency RMBS issuances in return for a few. The insurers may conduct the same analysis as the rating agencies do and may be granted private access to originators beyond disclosed information. Regulator may choose to regulate bond insurers and impose capital requirements. Whatever the system with bond insurance looks like, it might be better than the one allowing unmatched responsibilities and liabilities.

Part VI Concluding Remarks

The primary purpose of this paper is to provide the necessary facts for future discussions and to raise questions on some of the "settled views" about the non-agency RMBS market. As a result, most of the views expressed in this paper so far do seem to be destructive than constructive. In addition, this paper seems to be defending originators. Not at all. What the author is trying to argue is that originators have acted exactly as how they are supposed to act under the originate-to-sell model. To the extent that they have failed to deliver what they have promised, they should pay for it through performing their repurchasing obligations. If they no longer exist, the sponsors of the transactions, some of which do still exist, should perform as they have promised. On the other hand, this paper seems to be particularly harsh on the rating agencies. First, they are culpable for making such gigantic mistakes, honest or not. Second, the core of the criticism is really on the system itself – a system guarded by only a few of so-called guardians is inherently unstable and unsound. It may be noted that this paper does not offer a view on investment banks. This is partly because there is still no substantial evidence either supporting or denying that they have failed to do what they are supposed to do. If courts eventually find that they have failed in performing their due diligence performances, then they should just face the consequences.

As a final note, the Treasury has just released its plan to set up a Public Private Investment Program and utilize public and private money to purchase the toxic assets on the balance sheets of the financial institutions. It may be advisable for the program to conduct a forensic review on the existing mortgage loans in a mortgage pool before it purchases the securities backed by the pool. If some mortgage loans are found to be in breach of the representations and warranties provided by the sponsor at the issuance, then the sponsor should buy them back. Just as what they have promised. The program should not be an opportunities for entities to escape liabilities belonging to them.

Appendix 1: Issuance Types

(volume in millions)		Public Transactions			Private Non-NIM Transactions			Private NIM Transactions		
Asset Type	Year	Number	Volume	Percentage	Number	Volume	Percentage	Number	Volume	Percentage
Prime Jumbo	2001	259	129,314.72	90.94%	23	12,830.85	9.02%	1	57.00	0.00%
	2002	263	197,072.01	96.18%	19	7,828.39	3.82%	0	0.00	0.00%
	2003	354	232,241.55	97.93%	13	4,902.85	2.07%	0	0.00	0.23%
	2004	324	217,817.64	93.33%	17	15,535.72	6.66%	1	25.00	0.17%
	2005	315	251,994.80	89.77%	12	28,708.86	10.23%	0	0.00	0.00%
	2006	244	208,927.39	95.38%	10	9,864.00	4.50%	6	246.03	0.10%
	2007	210	179,936.27	99.71%	0	0.00	0.00%	5	526.00	0.08%
Alt A	2001	38	11,373.58	100.00%	0	0.00	0.00%	0	0.00	0.00%
	2002	110	51,714.30	96.73%	4	1,736.92	3.25%	1	11.50	0.02%
	2003	149	69,035.95	93.10%	9	5,039.43	6.80%	8	75.64	0.10%
	2004	255	150,802.02	95.09%	11	7,300.08	4.60%	29	483.77	0.31%
	2005	409	325,672.46	98.00%	8	6,097.60	1.83%	21	553.15	0.17%
	2006	423	359,399.88	98.29%	7	3,392.16	0.93%	73	2,878.81	0.79%
	2007	316	240,443.21	96.33%	16	6,914.19	2.77%	64	2,252.45	0.90%
Subprime	2001	110	54,357.49	62.44%	17	30,496.60	35.03%	46	2,198.80	2.53%
	2002	152	101,850.43	83.02%	23	15,815.53	12.89%	112	5,015.01	4.09%
	2003	209	174,670.53	89.59%	22	12,207.43	6.26%	146	8,080.40	4.14%
	2004	320	342,169.36	94.38%	7	4,628.31	1.28%	243	15,751.83	4.34%
	2005	406	450,087.88	96.79%	9	2,812.67	0.60%	297	12,133.81	2.61%
	2006	420	426,779.83	95.07%	19	9,405.19	2.10%	308	12,714.00	2.83%
	2007	196	176,954.70	87.80%	30	18,092.79	8.98%	176	6,499.33	3.22%
HELOC	2001	31	14,509.51	93.54%	3	1,002.71	6.46%	0	0.00	0.00%
	2002	38	20,905.68	85.29%	5	3,606.98	14.71%	0	0.00	0.00%
	2003	45	18,392.59	90.38%	5	1,850.03	9.09%	3	108.75	0.53%
	2004	63	43,820.61	89.21%	17	5,302.75	10.79%	0	0.00	0.00%
	2005	76	51,709.35	85.14%	18	8,997.28	14.81%	1	29.00	0.05%
	2006	99	63,605.99	85.68%	25	10,011.47	13.49%	20	623.51	0.84%
	2007	39	22,058.12	69.58%	16	9,525.44	30.05%	3	119.62	0.38%
Scratch&Dent	2001	8	2,292.11	41.51%	16	3,230.15	58.49%	0	0.00	0.00%
	2002	12	5,756.00	22.87%	37	19,416.11	77.13%	0	0.00	0.00%
	2003	31	19,618.21	41.71%	53	27,304.95	58.05%	5	109.80	0.23%
	2004	31	12,631.33	36.40%	61	22,010.77	63.43%	4	58.82	0.17%
	2005	33	10,479.94	38.25%	57	16,915.58	61.75%	0	0.00	0.00%
	2006	16	4,760.89	29.32%	47	11,458.25	70.58%	3	16.34	0.10%
	2007	11	3,710.76	35.39%	27	6,765.16	64.53%	1	8.44	0.08%

(Source: Inside Mortgage Finance, SEC filings, Thomson SDI and author's own calculation. "NIM" is short for net interest margin)

Appendix 2: Top Originators By Asset Type
Top 20 Prime Jumbo Originators in 2007

Company	Volume (Billions)	Market Share	Market Share '06	Type	Status
Wells Fargo	61.85	17.80%		Commercial bank	Existing
Washington Mutual	45.2	13.00%		Commercial bank	Acquired by JPMorgan
Citibank	33.9	9.80%		Commercial bank	Existing
Bank of America	26	7.50%		Commercial bank	Existing
Countrywide	24.85	7.20%		Federal savings bank	Acquired by Bank of America
Chase Home Finance	24.1	6.90%		Commercial bank	Existing
SunTrust Mortgage Inc.	10.65	3.10%		Commercial bank	Existing
Lehman Brothers	10.55	3.00%		Investment bank	Bankrupt
American Home Mortgage Corp.	10.02	2.90%		Mortgage loan company	Bankrupt
PHH Mortgage	9.71	2.80%		Mortgage loan company	Existing
Residential Capital LLC	8.85	2.60%		Subsidiary of GMAC	Existing
Wachovia Corporation	6.96	2.00%		Commercial bank	Acquired by Wells Fargo
IndyMac	6.75	1.90%		Federal savings bank	Taken over by FDIC
National City Mortgage Co.	5.82	1.70%		Division of National City Bank	Existing
First Horizon Home Loans	3.84	1.10%		Commercial bank	Existing
GreenPoint Mortgage Funding Inc.	3.34	1.00%		Operating subsidiary of Capital One	Closed
Quicken Loans Inc.	2.8	0.80%		Mortgage loan company	Existing
AmTrust Bank	2.53	0.70%		Savings bank	Existing
Guaranty Bank	2	0.60%		Federal savings bank	Existing
US Bank Home Mortgage	1.95	0.60%		Commercial bank	Existing
Top 20 Total	301.67	87.00%			
Market Total	347	100%			

Source: Inside Mortgage Finance, SEC filings and company websites

Top 20 Alt-A Originators in 2007

Company	Volume (Billions)	Market Share	Market Share '06	Type	Status
Countrywide Financial	41.45	15.10%		Federal savings bank	Acquired by Bank of America
IndyMac	30.7	11.20%		Federal savings bank	Taken over by FDIC
Lehman Brothers	19.25	7.00%		Investment bank	Bankrupt
Citibank	16.5	6.00%		Commercial bank	Existing
Washington Mutual	14.7	5.30%		Federal savings bank	Existing
Residential Capital LLC	14.7	5.30%		Subsidiary of GMAC	Existing
Chase Home Finance	9.9	3.60%		Commercial bank	Existing
EMC Mortgage	9.42	3.40%		Subsidiary of Bear Stearns	Acquired by JPMorgan
ING Bank	8.8	3.20%		Commercial bank	Existing
GreenPoint Mortgage Funding Inc.	7.76	2.80%		Operating subsidiary of Capital One	Existing
Wells Fargo	6.8	2.50%		Commercial bank	Existing
First Magnus Financial	6.39	2.30%		Mortgage loan company	Bankrupt
AmTrust Bank	6.18	2.20%		Savings bank	Existing
National City Mortgage Co.	5.75	2.10%		Division of National City Bank	Existing
Flagstar Bank	5.4	2.00%		Federal savings bank	Existing
Quicken Loans Inc.	5.2	1.90%		Mortgage loan company	Existing
Wachovia Corporation	4.29	1.60%		Commercial bank	Acquired by Wells Fargo
Impac Mortgage Holdings	4.58	1.70%		REIT	Existing
First Horizon Home Loans	3.67	1.30%		Commercial bank	Existing
Bank of America	3.4	1.20%		Commercial bank	Existing
Top 20 Total	224.8	81.70%			
Total	275	100%			

Source: Inside Mortgage Finance, SEC filings and company websites

Top 20 Subprime Originators in 2007

Company	Volume (Billions)	Market Share	Market Share '06	Type	Status
CitiMortgage	19.7	10.20%		Member of Citigroup	Existing
HSBC Finance	18	9.30%		Member of HSBC	Existing
Countrywide Financial	17	8.80%		Federal savings bank	Acquired by Bank of America
Wells Fargo	15.4	8.00%		Commercial bank	Existing
First Franklin Financial Corp.	13.5	7.00%		Subsidiary of National City Bank	Closed
Chase Home Finance	11.5	6.00%		Commercial bank	Existing
Option One Mortgage	11.2	5.80%		Subsidiary of H&R Block	Closed
EMC Mortgage Corp.	7.9	4.10%		Subsidiary of Bear Stearns	Acquired by JPMorgan
Ameriquest Mortgage	6.4	3.30%		Mortgage loan company	Closed
BNC Mortgage	6.1	3.20%		Subsidiary of Lehman Brothers	Closed
Washington Mutual	5.5	2.90%		Federal savings bank	Acquired by Wells Fargo
WMC Mortgage	5	2.60%		Subsidiary of GE	Closed
New Century Financial	4.7	2.40%		REIT	Bankrupt
American General Finance	4.5	2.30%		Subsidiary of AIG	Existing
Equifirst	4.4	2.30%		Subsidiary of Barclays	Closed
Aegis Mortgage Corp.	4.3	2.20%		Mortgage loan company	Bankrupt
Residential Capital LLC	4.2	2.20%		Subsidiary of GMAC	Existing
Saxon Mortgage	4.1	2.10%		Subsidiary of Morgan Stanley	Existing
Accredited Home Lenders	4	2.10%		Mortgage loan company	Existing
Delta Financial Corp.	3.6	1.90%		Mortgage loan company	Bankrupt
Top 20 Total	171	88.80%			
Total	192.5	100%			

Source: Inside Mortgage Finance, SEC filings and company websites

Appendix 3: Types of Non-Agency Securitization Transactions in 2006

Volume in millions	Sponsor Type	Prime Jumbo		Alt A		Subprime	
Transaction Type A-1: Originator, securitization sponsor and lead underwriter are affiliated parties.	Banks	31135.84	14.90%	6023.71	1.68%	24686.75	5.78%
	Investment Banks	1633.98	0.78%	0	0.00%	11545.49	2.71%
	Non-bank Entities	4505.52	2.16%	4594.54	1.28%	26514.55	6.21%
Transaction Type A-2: Sponsor and lead underwriter are affiliated parties. Loans are originated by both affiliated and unaffiliated originators.	Banks	24936.17	11.94%	9166.71	2.55%	0	0.00%
	Investment Banks	19675.5	9.42%	45587.33	12.68%	13886.2	3.25%
	Non-bank Entities	3195.89	1.53%	26934.26	7.49%	8652.1	2.03%
Transaction Type A-3: Sponsor and lead underwriter are affiliated parties. Loans are originated by only one unaffiliated originator.	Banks	4652.28	2.23%	1151.28	0.32%	35726.76	8.37%
	Investment Banks	750.76	0.36%	49,057.07	13.65%	103184.72	24.18%
	Non-bank Entities	0	0.00%	0	0.00%	7830	1.83%
Transaction Type A-4: Sponsor and lead underwriter are affiliated parties. Loans are originated by multiple unaffiliated originators.	Banks	8296.16	3.97%	17989.95	5.01%	3521.53	0.83%
	Investment Banks	23010.12	11.01%	72396.18	20.14%	65403.39	15.32%
	Non-bank Entities	0	0.00%	0	0.00%	632.67	0.15%
Transaction Type B-1: Originator and sponsor are affiliated parties (or the same entity). Lead underwriter is unaffiliated.	Banks	13065.6	6.25%	33363.97	9.28%	17649.09	4.14%
	Investment Banks	0	0.00%	0	0.00%	0	0.00%
	Non-bank Entities	12997.89	6.22%	55341.11	15.40%	62175.06	14.57%
Transaction Type B-2: Originator and sponsor are affiliated parties (or the same entity). Lead underwriter is unaffiliated. Loans from other unaffiliated originators are included.	Banks	36435.77	17.44%	2368.65	0.66%	866.97	0.20%
	Investment Banks	0	0.00%	0	0.00%	0	0.00%
	Non-bank Entities	21206.59	10.15%	29963.83	8.34%	10636.81	2.49%
Transaction Type B-3: Sponsor purchases all loans from an unaffiliated originator. Lead underwriter is unaffiliated.	Banks	0	0.00%	0	0.00%	1666.18	0.39%
	Investment Banks	0	0.00%	0	0.00%	0	0.00%
	Non-bank Entities	981.13	0.47%	576.12	0.16%	16660.7	3.90%
Transaction Type B-4: Sponsor purchases loans from multiple unaffiliated originators. Lead underwriter is unaffiliated.	Banks	1252.31	0.60%	0	0.00%	2758.28	0.65%
	Investment Banks	433.63	0.21%	541.93	0.15%	0	0.00%
	Non-bank Entities	762.25	0.36%	4343.21	1.21%	12782.58	3.00%

Source: SEC filings, author's own calculation. (1) Investment banks exclude securities subsidiaries of large commercial bank groups. Originations by non-bank lenders owned by investment banks are added to investment bank origination volumes. Banks include commercial banks and savings banks. Indymac is treated as a bank but Countrywide is treated as a non-bank lender. (2) Affiliation is defined here more stringently than under accounting rules. Only wholly owned subsidiaries of one financial group are considered to be affiliates.

Appendix 4: Comparison of Loan Tape Layouts

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
General Information							
Cut-off Date		●	●				
Loan Group (Identifying loan group for structures with multiple loan groups)					●	●	●
Loan ID (Unique number identifying the loan)		●	●	●	●	●	●
Sub Pool ID				●	●	●	
Borrower ID					●		
Loan Origination and Servicing							
Originator		●	●	●	●	●	●
Origination Channel (broker, correspondent, retail, etc)		●	●			●	●
Broker Indicator (Whether a broker took the application)							●
Origination or Discount Points						●	●
Total Costs Financed (As costs financed by the borrower including origination fee, insurance, interest rate buydowns, etc.)						●	
Servicer (Using Fitch's code, likely to mean the actual servicer rather than master servicer)						●	
Primary Servicer		●	●		●		●
Master Servicer		●	●		●		
Special Servicer		●	●				
Servicing Fee (Stated in basis points)						●	●
Servicing Advance Methodology (How principal/interest are to be advanced, e.g. on an actual or scheduled basis)							●
Escrow Indicator (Whether various expenses such as taxes and insurance are paid directly by borrower or through escrow)				●	●		●
Escrow Amount					●		
Buy Down or Employer Subsidy Indicator						●	
Buy Down Period (Total number of months during which any buy down is in effect)							●
Underwriting Due Diligence (S&P's due diligence grade)			●				
Value Due Diligence (S&P's due diligence grade)			●				
Regulatory Compliance Due Diligence (S&P's due diligence grade)			●				
Adherence to S&P File Format (Yes or no)			●				
Relocation Loan Indicator (Whether the loan is part of a corporate relocation program)							●
Employee Loan (Whether it is a loan to an employee of the originator)					●		
Covered/High Cost Loan Indicator (Loan categorized as "high cost")							●

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Anti-Predatory Lending Category (S&P's category of predatory lending laws)		●	●				
Property Information							
Property Type (single family, two family, PUD, etc.)		●	●	●	●	●	●
Legal Interest Type (fee simple or leasehold)						●	
Occupancy Status (owner occupied, investor occupied, second home)		●	●	●	●	●	●
Property Address		●	●			●	
City		●	●			●	●
Zip Code		●	●	●	●	●	●
State		●	●	●	●	●	●
Association Fees (monthly fee amount for PUDs, condos, coops, etc.)						●	
Sales Price (negotiated price between buyer and seller)		●	●				●
Original Appraised Value		●	●	●	●	●	●
Original Appraisal Date		●	●				●
Original Appraisal Type (full, AVM, BPO, drive by, etc.)		●	●	●	●	●	●
Original Automated Valuation Model (AVM)		●	●				●
Original AVM Confidence Score							●
Most Recent Appraisal Value				●	●		●
Most Recent Appraisal Type							●
Most Recent Appraisal Date							●
Most Recent AVM Model Name							●
Most Recent AVM Confidence Score							●
Asset Verification (confirmation of funds used for a down payment and closing costs)		●	●				
General Borrower Information							
Total Number of Borrowers (Number of borrowers obligated to repay the loan)							●
Borrower Credit Quality (Grade from loan underwriter's system)		●	●	●	●	●	
First Time Home Buyer Indicator				●	●		●
Borrower Qualification Payment Type (Type of mortgage payment used to quality the borrower for the loan)					●		
Borrower Qualification Payment Rate (The rate used to qualify the borrower for the loan)					●		
Mortgage Score Value (Not currently used)		●	●			●	
Date of Mortgage Score (Not currently used)		●	●				
Validated Automated Underwriting System (Not currently used)		●	●				

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Risk Grades (Originator assigned risk grades according to S&P's system)		●	●				
Months from disposition of bankruptcy at origination date				●	●		●
Months from disposition of foreclosure at origination date				●	●		●
Number of Mortgaged Properties (Number of properties owned by the borrower that currently secure mortgage loans)							●
FICO Score							
Current FICO Score		●	●	●			
Original FICO Score (If different from Current FICO Score)		●	●			●	
NetxGen FICO Score Indicator (for Current FICO Score)		●	●			●	
Original FICO Model (Classic, Classic08, Next Generation model)							●
Most Recent FICO Date (Date on which the most recent FICO score was obtained)							●
Equifax FICO score for primary borrower					●		●
Experian FICO score for primary borrower					●		●
TransUnion FICO score for primary borrower					●		●
Equifax FICO score for secondary borrower					●		●
Experian FICO score for secondary borrower					●		●
TransUnion FICO score for secondary borrower					●		●
FICO score if credit bureau not specified					●		
Most Recent Primary Borrower FICO Score							●
Most Recent Co-Borrower FICO Score							●
Most Recent FICO Method (Name of the credit bureau that provided the most recent FICO score)							●
Vantage Score: Primary Borrower							●
Vantage Score: Co-Borrower							●
Vantage Score Date							●
Total count of outstanding and open trade lines					●		●
Maximum trade line amount currently open					●		●
Longest Trade Line					●		●
Total dollar amount of consumer claims submitted to collection agencies					●		
Employment							
Length of Employment of Borrower at Present Job		●	●		●		●
Length of Employment: Co-borrower							●
Self Employed Borrower Indicator		●	●		●	●	●

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Income and Assets							
Borrower Income		●	●				
Co-Borrower Income		●	●				
Borrower & Co-Borrower Disposable Income		●	●	●	●		
Primary Borrower Wage Income							●
Primary Borrower Other Income							●
Co-Borrower Wage Income							●
Co-Borrower Other Income							●
All Borrower Wage Income							●
All Borrower Total Income							●
4506-T Indicator (Whether a Transcript of Tax Return was obtained)							●
Borrower Income Verification Level							●
Co-Borrower Income Verification							●
Borrower Employment Verification Level							●
Co-Borrower Employment Verification Level							●
Borrower Asset Verification Level							●
Co-Borrower Asset Verification Level							●
Monthly Debt of All Borrowers							●
Primary Borrower's Net Worth						●	
Primary Borrower's liquid reserves (Liquid/Cash Reserves (RESTART))						●	●
Percentage of Down Payment from Borrower Own Funds							●
Net Pledged Assets (Assets pledged for the loan)						●	●
Cash Reserves at Closing (Fund available to borrower after making a down payment and paying all closing costs)		●	●	●	●		
# Months Reserves at Closing (Cash Reserves at Closing divided by principal, interest, tax and insurance payment amount)		●	●				
General Loan Information							
Product Description (prime, subprime, Alt A, etc)		●	●			●	
Loan Type (fixed rate, ARM, balloon, etc)		●	●	●	●	●	●
Loan Purpose (purchase/refinance, etc.)		●	●	●	●	●	●
Documentation Type (full, limited, or no documentation, etc.)		●	●	●	●	●	
HELOC Indicator				●	●		●

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
HELOC Draw Period (Number of months in which the borrower may withdraw funds)							●
Loan Terms							
Origination Date of Loan		●	●	●	●	●	●
Original Loan Term		●	●	●	●	●	●
Remaining Loan Term				●	●	●	
Amortization Term (Term when the loan amortizes)				●	●	●	●
First Payment Date of Loan (The first due date on which the loan is due)		●	●		●	●	●
Loan Maturity Date						●	
Original Loan Balance		●	●	●	●	●	
Current Loan Balance		●	●	●	●	●	●
Simple Interest or Actuarial Interest						●	●
Original Interest Rate					●	●	●
Fully Indexed Rate (Fully indexed rate at origination)					●		
Current Interest Rate		●	●	●	●	●	●
Interest Paid Through Date (Date through which interest in paid with the current payment)							
Prepayment Penalty Indicator			●				
Prepayment Penalty Term			●	●	●	●	●
Prepayment Penalty Type			●	●	●		●
Prepayment Penalty Due (Prepayment penalty due during each phase of the prepayment penalty term)							●
Prepayment Penalty Multiplier (Multiple of interest due for pledged prepayment penalties)							●
Prepayment Penalty Hard Term (Number of months in which a hard prepayment penalty applies for hybrid prepayment penalties)							●
Length of Interest Only Period (In months)				●	●	●	●
Payment Type (fully amortizing, interest only, growing equity, negative amortizing, etc.)						●	
Liens and LTV							
Lien Position				●	●	●	●
Second Lien Indicator		●	●				
Simultaneous Second Indicator (Indicates whether there is a simultaneous second lien)		●	●				
Junior Balance (Loan amount for all loans which are junior to the securitized loan)				●	●	●	●
Senior Balance (Loan amount for all loans which are senior to the securitized loan)				●	●	●	●
Loan Type of Most Senior Lien (fixed, ARM, hybrid, etc)							●

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Hybrid Period of Most Senior Lien							●
Negative Amortization Limit of Most Senior Lien							●
Origination Date of Most Senior Lien							●
Participation Percentage (what percentage of the loan is securitized)						●	
Original LTV Ratio		●	●	●	●		●
Current LTV Ratio						●	
Junior LTV Ratio				●	●		
Combined Original LTV Ratio (The total amount of all of the outstanding mortgage liens divided by appraisal value)		●	●	●	●		●
Combined Current LTV Ratio						●	
Mortgage Insurance							
Mortgage Insurance Company Name							●
Mortgage Insurance Percent (Mortgage insurance coverage percentage paid by lender)							●
MI: Lender or Borrower Paid?							●
Mortgage Insurance Coverage (Percentage of the mortgage loan's principal balance covered by insurance)		●	●	●	●	●	
Mortgage Insurer		●	●	●	●	●	
Eligibility for Lender-paid MI Indicator						●	
Lender Paid MI				●	●	●	
Lender-paid MI Insurer				●	●	●	
Lender-paid MI Coverage						●	
Lender-paid MI Fee						●	
Pool Insurance Co. Name (Name of pool insurance provider)							●
Pool Insurance Stop Loss %							●
Debt and Payments							
Mortgage Payment Method (Monthly statement, automatic debit to account, coupon book, etc.)		●					
Due date of last made payment					●		
Date the paid through date was reported as of					●		
Total Debt to Income Ratio (Total monthly liabilities divided by income)		●	●	●	●	●	
Combined Current Loan Balance		●	●				
Current Payment Amount Due (Next total payment to be collected)							●
Scheduled P&I Payment (Current periodic principal and interest due on the loan)						●	
PITI Payment Amount (Current periodic principal, interest, taxes and insurance due on the loan)		●	●			●	

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Current Other Monthly Payments (Payments on the property other than principal/interest)							●
Total Other Debt (All liabilities of the borrower excluding the debt on the subject property.)		●	●				
Pay History Grade (Moody's grade)					●		
12-month delinquency history (How many months the borrower is delinquent on the property in the previous 12 months)		●	●	●	●	●	●
Delinquency Calculation Method (OAS or MBA method)						●	
Current Delinquency Status (Days delinquent under either OAS or MBS method)		●	●				
Current Payment Status (Number of payments the borrower is past due as of the cut-off date)							●
Rolling Delinquency (If rolling delinquency is allowed)					●		
Last Paid Installment Date						●	
Refinance Loans							
Years in Home (only applicable to refinance loans)					●		●
Cash Out Amount					●		●
Use of Cash-Out Refinance Proceeds (How cash-out proceeds are used)		●	●				
Prior Loan Origination Date		●	●				
Refinance Loans – Prior Loan Purchase Price		●	●				
Adjustable Rate Mortgages Loan Terms							
Negative Amortization Indicator (yes or no)		●	●				
Margin (The amount added to an index)		●	●	●	●	●	●
Interest Rate Adjustment Frequency (Time between coupon adjustments of a floating-rate mortgage)		●	●				
Original Interest Rate		●	●				
Annual Payment Cap (Maximum percentage per year by which an adjustable-rate mortgage borrower's monthly principal and interest payment can increase.)		●	●				
Initial Interest Rate Cap on First Adjustment Date		●	●	●	●	●	●
Initial Interest Rate Floor on First Adjustment Date							●
Subsequent Interest Rate Reset Period							●
Periodic Rate Cap Subsequent to First Adjustment Date		●	●	●	●	●	●
Periodic Payment Cap (Maximum percentage by which a payment can change in one period)							●
Negative Amortization Recast Period (Limit (in months) during which negative amortization is allowed and after which the loan is recast)							●
Subsequent Interest Rate Floor							●
Lifetime Cap Rate		●	●	●	●	●	●

Data Fields and Descriptions	Diligence Check	S&P		Moody's		Fitch	RESTART
		'04	'08	Pre-07	Latest	Latest	'09
Lifetime Floor Rate				●	●	●	●
Negative Amortization Limit		●	●		●	●	●
Negative Amortization Initial Minimum Payment Term (Term over which the initial minimum payment applies)							●
Negative Amortization Recast Date (Date of payment recast after a loan reaches its maximum balance)							●
Negative Amortization Subsequent Payment Adjustment Frequency (Number of months between minimum payment adjustment after the first adjustment has been made)							●
Index Type (Index used to calculate the adjustable rate)					●		●
Month of First Reset (Months before the loan first adjusts)					●	●	
Reset Periodicity (How often the interest rate of the loan resets)					●	●	●
Initial Fixed Rate Period (For hybrid ARMs, period between first payment date and first interest adjustment date)							●
Fully Indexed Rate							●
Qualification Method (Type of mortgage payment used to quality a borrower for the loan)							●
Current Minimum Payment							●
Option ARM Loan Terms							
Option ARM Indicator (yes or no)					●		
Options at Recast (Whether the borrower may pay fully amortizing, I/O, or minimum payment after recast)					●		●
Option ARM Indicator							●
Fully Indexed Monthly Payment (Fully amortizing, fully indexed monthly payment)					●		
Initial Minimum Payment Option Available (Initial minimum payment option available to the borrower)					●		
Initial Minimum Payment Period (Initial number of months the borrower can pay the minimum)					●		
Annual Payment Cap (Max % of the minimum payment can be adjusted each year)					●		

Appendix 5: Information Disclosure in the Prospectus Supplement

	Item No.	Title of the Relevant Regulation AB Section	Description of the Information Required to Be Disclosed
Transaction Overview	Item 1102	Forepart of registration statement and outside cover page of the prospectus	• Information to be presented on the front page of the registration statement
	Item 1103	Transaction summary and risk factors	• Transaction summary • Risk factors
Transaction Parties	Item 1104	Sponsors	• Sponsor's name and form of organization; • General character of the sponsor's business; • The sponsor's securitization program; and • The sponsor's material roles and responsibilities in its securitization program.
	Item 1106	Depositors	• The depositor's name, ownership structure and form of organization; • General character of the sponsor's business; • General character of any activities the depositor is engaged in other than securitizing assets; and • Any continuing duties of the depositor after issuance of the securities.
	Item 1107	Issuing entities	• Name of the issuing entities and form of organization; • File the issuing entity's governing documents as an exhibit; • Permissible activities and restrictions on the activities of the issuing entity; • Any specific discretionary activities; and • Provisions or arrangements relating to the issuing entities.
	Item 1108	Servicers	• Roles and responsibilities of each servicer; • Information and experience of each servicer; • Servicing agreements and servicing practices; and • Back-up servicing arrangements
	Item 1109	Trustees	• Trustee's name and form of organization; • Trust's prior experience; • Trustee's duties and responsibilities; under the government documents and under law; • Limitations on the trustee's liability; • Any indemnification provisions; and • Any contractual provisions or understandings regarding the trustee's replacement.
	Item 1110	Originators	• Identify any originator that originates 10% or more of the pool assets; • Information about any originator that originates 20% or more of the pool assets: o The originator's form of organization; o Description of the originator's origination program and experience. Include if material information on the originator's origination portfolio and the originator's underwriting criteria.
	Item 1117	Legal proceedings	• Description of legal proceedings pending against the sponsor, depositor, trustee, issuing entity, and servicer.

	Item No.	Title of the Relevant Regulation AB Section	Description of the Information Required to Be Disclosed
	Item 1119	Affiliations and certain relationships and related transactions	• Affiliations amongst transaction parties.
Past Pool Performance	Item 1105	Static pool information	• Static pool information regarding delinquencies, cumulative losses and prepayments for prior securitized pools of the sponsor for that asset type.
Current Mortgage Pool Information	Item 1111	Pool assets	• General information regarding pool asset types and selection criteria; • Pool characteristics; • Delinquency and loss information; • Sources of pool cash flow; • Representations and warranties and repurchase obligations regarding pool assets; • Claims on pool assets; and • Revolving periods, prefunding accounts and other changes to the asset pool.
	Item 1112	Significant obligors of pool assets	*Note: Not applicable for residential MBS as no mortgage loan will be significantly larger than others.
Tranche Structure and Credit Enhancement	Item 1113	Structure of the transaction	• Types or categories of securities to be offered, flow of funds, tranche structure, determination of interest rate, methods to pay principal, frequency of distribution, etc; • Triggers to structure changes, overcollateralization ratio; • Security holder rights; and • Fees and expenses to be paid out of the cash flows.
	Item 1120	Ratings	• Whether the issuance or sale of any securities is conditioned on the assignment of a rating by rating agencies. • Any arrangements to have such rating monitored on an on-going basis.
	Item 1114	Credit enhancement and other support, except for certain derivatives instruments	• Description of credit enhancement mechanisms; • Information regarding significant enhancement providers
	Item 1115	Certain derivatives instruments	• Derivatives instruments that are used to alter the payment characteristics of the cash flows; and • Financial information of significant counterparties.
Reports	Item 1118	Reports and additional information	• Description of the reports provided to security holders under the transaction documents; and • Reports to be filed with the SEC.
Tax	Item 1116	Tax matters	• Tax issues relating to the purchase of the securities

Appendix 6: Descriptions of Underwriting Standards of Subprime Originators

Originator	Appearances	Issuers
New Century	64	15
Countrywide	57	5
Option One	44	12
WMC	38	10
Fremont	32	9
Residential Funding Company	32	3
First Franklin	29	2
Wells Fargo	25	8
BNC Mortgage Inc.	23	2
Ameriquest	21	9
Long Beach	16	1
Ownit	16	6
Decision One	15	4
Lehman Bank	15	1
NovaStar	13	4
ResMAE	12	6
Accredited Home Lenders	11	6
Bear Stearns	11	1
Equifirst	11	5
First NLC	11	5
Washington Mutual	11	1
Aames Financial Corporation	10	5
Argent Mortgage Company	10	4
HSBC	10	3
Merrill Lynch	10	1
Deutsche Bank	9	1
Encore	9	4
Fieldstone	9	5
Aegis Mortgage Corporation	7	5
Indymac	7	1
People's Choice	7	5
JPM	6	1
Saxon	6	1
SouthStar	6	1
Finance America	5	2
Wilmington	5	3

Sample Description of Underwriting Standards
(excerpt from prospectus supplement for CWABS Asset-Backed Certificates Trust 2007-7)

General . All of the Statistical Calculation Pool Mortgage Loans in Loan Group 1, and approximately 88.73% of the Statistical Calculation Pool Mortgage Loans in Loan Group 2, were originated by Countrywide Home Loans in accordance with its underwriting standards for credit-blemished mortgage loans, which are set forth below under "— *Credit-Blemished Mortgage Loans* ". Those Statistical Calculation Pool Mortgage Loans are identified in the "Loan Documentation Type" tables in Annex A to this prospectus supplement as either "Full Documentation" or "Stated Income". The remaining Statistical Calculation Pool Mortgage Loans were originated by Countrywide Home Loans as described below under " *—Mortgage Loans other than Credit-Blemished Mortgage Loans* ".

Credit-Blemished Mortgage Loans . The following is a description of the underwriting procedures customarily employed by Countrywide Home Loans with respect to credit-blemished mortgage loans. Countrywide Home Loans has been originating first lien credit-blemished mortgage loans since 1995 and second lien credit-blemished mortgage loans since 1997. Countrywide Home Loans produces its credit-blemished mortgage loans through its Consumer Markets, Full Spectrum Lending, Correspondent Lending and Wholesale Lending Divisions. Prior to the funding of any credit-blemished mortgage loan, Countrywide Home Loans underwrites the related mortgage loan in accordance with the underwriting standards established by Countrywide Home Loans. In general, the mortgage loans are underwritten centrally by a specialized group of underwriters who are familiar with the unique characteristics of credit-blemished mortgage loans. In general, Countrywide Home Loans does not purchase any credit-blemished mortgage loan that it has not itself underwritten.

Countrywide Home Loans' underwriting standards are primarily intended to evaluate the value and adequacy of the mortgaged property as collateral for the proposed mortgage loan and the borrower's credit standing and repayment ability. On a case by case basis, Countrywide Home Loans may determine that, based upon compensating factors, a prospective borrower not strictly qualifying under the underwriting risk category guidelines described below warrants an underwriting exception. Compensating factors may include low loan-to-value ratio or combined loan-to-value ratio, as applicable, low debt-to-income ratio, stable employment, time in the same residence or other factors. It is expected that a significant number of the Mortgage Loans will have been originated based on these types of underwriting exceptions.

Each prospective borrower completes an application for credit which includes information with respect to the applicant's assets, liabilities, income and employment history, as well as certain other personal information. Countrywide Home Loans requires an independent credit bureau report on the credit history of each applicant in order to evaluate the applicant's prior willingness and/or ability to repay. The report typically contains information relating to credit history with local and national merchants and lenders, installment debt payments and any record of defaults, bankruptcy, repossession, suits or judgments, among other matters.

After obtaining all applicable employment, credit and property information, Countrywide Home Loans uses a debt-to-income ratio to assist in determining whether the prospective borrower has sufficient monthly income available to support the payments of principal and interest on the mortgage loan in addition to other monthly credit obligations. The " ***debt-to-income ratio*** " is the ratio of the borrower's total monthly credit obligations to the borrower's gross monthly income. The maximum monthly debt-to-income ratio varies depending upon a borrower's credit grade and documentation level (as described below) but does not generally exceed 55%. Variations in the monthly debt-to-income ratios limit are permitted based on compensating factors.

Countrywide Home Loans' underwriting standards are applied in accordance with applicable federal and state laws and regulations and require an independent appraisal of the mortgaged property prepared on a Uniform Residential Appraisal Report (Form 1004) or other appraisal form as applicable to the specific mortgaged property type. Each appraisal includes a market data analysis based on recent sales of comparable homes in the area and, where deemed appropriate, replacement cost analysis based on the current cost of constructing a similar home and generally is required to have been made not earlier than 180 days prior to the date of origination of the mortgage loan. Every independent appraisal is reviewed by a representative of Countrywide Home Loans before the loan is funded, and an additional review appraisal is generally performed in connection with appraisals not provided by Landsafe Appraisals, Inc., a wholly owned subsidiary of Countrywide Home Loans. In most cases, properties that are not at least in average condition (including properties requiring major deferred maintenance) are not acceptable as collateral for a credit-blemished loan. The maximum loan amount varies depending upon a borrower's credit grade, Credit Bureau Risk Score, and documentation level but does not generally exceed $1,000,000 for first lien credit-blemished mortgage loans, or $175,000 for second lien credit-blemished mortgage loans. Variations in maximum loan amount limits are permitted based on compensating factors.

Countrywide Home Loans' underwriting standards permit first lien credit-blemished mortgage loans with loan-to-value ratios at origination of up to 100% and second lien credit-blemished mortgage loans with combined loan-to-value ratios at origination of up to 100% depending on the program, type and use of the property, documentation level, creditworthiness of the borrower, debt-to-income ratio and loan amount.

Countrywide Home Loans requires title insurance on all credit-blemished mortgage loans. Countrywide Home Loans also requires that fire and extended coverage casualty insurance be maintained on the mortgaged property in an amount at least equal to the principal balance or the replacement cost of the mortgaged property, whichever is less.

Countrywide Home Loans' credit-blemished mortgage loan underwriting standards are more flexible than the standards generally acceptable to Countrywide Home Loans for its non-credit-blemished mortgage loans with regard to the borrower's credit standing and repayment ability. While more flexible, Countrywide Home Loans' underwriting guidelines still place primary reliance on a borrower's ability to repay; however Countrywide Home Loans may require lower loan-to-value ratios or combined loan-to-value ratios, as applicable, than for loans underwritten to more traditional standards. Borrowers who qualify generally have payment histories and debt-to-income ratios which would not satisfy more traditional underwriting guidelines and may have a record of major derogatory credit items such as outstanding judgments or prior bankruptcies. Countrywide Home Loans' credit-blemished mortgage loan underwriting guidelines establish the maximum permitted loan-to-value ratio or combined loan-to-value ratio, as applicable, for each loan type based upon these and other risk factors with more risk factors resulting in lower ratios.

Countrywide Home Loans underwrites or originates credit blemished mortgage loans pursuant to alternative sets of underwriting criteria under its Full Documentation Loan Program (the " ***Full Doc Program*** ") and Stated Income Loan Program (the " ***Stated Income Program*** "). Under each of the underwriting programs, Countrywide Home Loans verifies the loan applicant's sources and amounts of income (except under the Stated Income Program where the amount of income is not verified), calculates the amount of income from all sources indicated on the loan application, reviews the credit history of the applicant, calculates the debt-to-income ratio to determine the applicant's ability to repay the loan, and reviews the appraisal of the mortgaged property for compliance with Countrywide Home Loans' underwriting standards.

Under the Stated Income Program, the borrower's employment and income sources and amounts must be stated on the borrower's application for credit. The borrower's income as stated must be reasonable for the related occupation and the determination as to reasonableness is subject to the loan underwriter's discretion. However, the borrower's income as stated on the application is not independently verified. With respect to first lien credit-blemished mortgage loans, maximum loan-to-value ratios are generally lower than those permitted under the Full Doc Program. Except as otherwise stated above, the same mortgage credit, consumer credit and collateral related underwriting guidelines apply.

Under the Full Doc and Stated Income Programs, various risk categories are used to grade the likelihood that the borrower will satisfy the repayment conditions of the mortgage loan. These risk categories establish the maximum permitted loan-to-value ratio or combined loan-to-value ratio, as applicable, debt-to-income ratio and loan amount, given the borrower's credit history, the occupancy status of the mortgaged property and the type of mortgaged property. In general, more (or more recent) derogatory credit items such as delinquent mortgage payments or prior bankruptcies result in a loan being assigned to a higher credit risk category.

Countrywide Home Loans' underwriting guidelines for credit blemished mortgage loans utilize credit grade categories to grade the likelihood that the borrower will satisfy the repayment conditions of the mortgage loans. In general, a credit grade category is assigned by evaluating a borrower's mortgage history, time since bankruptcy, and time since foreclosure or notice of default. In the case of borrowers with less than twelve months' mortgage history, credit grade category is assigned by evaluating, time since bankruptcy, and time since foreclosure or notice of default. The credit grade categories establish guidelines for determining maximum allowable loan-to-value ratios or combined loan-to-value ratios, as applicable, and loan amounts given the borrower's Credit Bureau Risk Score, and maximum allowable debt-to-income ratios for a given mortgage loan. A summary of the credit grade categories is set forth below.

First Lien Credit Grade Category: "A"

Loan-To-Value Ratio : Maximum of 100%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $1,000,000
Credit Bureau Risk Score : Minimum of—
500 for loan amounts up to $700,000,
560 for loan amounts of $700,001 to $750,000,
580 for loan amounts of $750,001 to $850,000, or
600 for loan amounts of $850,001 to $1,000,000.
Mortgage History : No more than 1 non-consecutive delinquency of 30 days during the past 12 months.
Bankruptcy : At least 1 day since discharge or 2 years since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 3 years since foreclosure/notice of default released.

Second Lien Credit Grade Category: “A”

Combined Loan-To-Value Ratio : Maximum of 100%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $175,000
Credit Bureau Risk Score : Minimum of—
560 for loan amounts up to $100,000,
580 for loan amounts of $100,001 to $125,000,
600 for loan amounts of $125,001to $137,500,
620 for loan amounts of $137,501 to $162,500, and
640 for loan amounts of $162,501 to $175,000.
Mortgage History : No more than 1 non-consecutive delinquency of 30 days during the past 12 months.
Bankruptcy : At least 1 day since discharge or 2 years since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 3 years since foreclosure/notice of default released.

First Lien Credit Grade Category: “A-”

Loan-To-Value Ratio : Maximum of 90%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $850,000
Credit Bureau Risk Score : Minimum of—
500 for loan amounts up to $650,000,
580 for loan amounts of $650,001 to $750,000, or
620 for loan amounts of $750,001 to $850,000.
Mortgage History : No more than 2 non-consecutive delinquencies of 30 days during the past 12 months.
Bankruptcy : At least 1 day since discharge or 2 years since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 3 years since foreclosure/notice of default released.

Second Lien Credit Grade Category: “A-”

Combined Loan-To-Value Ratio : Maximum of 85%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $100,000
Credit Bureau Risk Score : Minimum of 560
Mortgage History : No more than 2 non-consecutive delinquencies of 30 days during the past 12 months.
Bankruptcy : At least 1 day since discharge or 2 years since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 3 years since foreclosure/notice of default released.

First Lien Credit Grade Category: “B”

Loan-To-Value Ratio : Maximum of 85%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $650,000
Credit Bureau Risk Score : Minimum of—
500 for loan amounts up to $600,000,
580 for loan amounts of $600,001 to $650,000.
Mortgage History : No more than 1 delinquency of 60 days in the past 12 months. Delinquencies of 30 days are not restricted.
Bankruptcy : At least 1 day since discharge or 1 year since dismissal of Chapter 7 or 13 Bankruptcy, or open Chapter 13 Bankruptcy must be paid-off through escrow at funding.
Foreclosure/Notice of Default : At least 2 years since foreclosure/notice of default released.

Second Lien Credit Grade Category: “B”

Combined Loan-To-Value Ratio : Maximum of 80%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $100,000
Credit Bureau Risk Score : Minimum of 560
Mortgage History : No more than 1 delinquency of 60 days in the past 12 months. Delinquencies of 30 days are not restricted.
Bankruptcy : At least 1 day since discharge or 1 year since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 2 years since foreclosure/notice of default released.

First Lien Credit Grade Category: “C”

Loan-To-Value Ratio : Maximum of 80%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $600,000
Credit Bureau Risk Score : Minimum of—
500 for loan amounts up to $550,000, or
580 for loan amounts of $550,001 to $600,000.
Mortgage History : No more than 1 delinquency of 90 days during the past 12 months. Delinquencies of 30 days and 60 days are not restricted.
Bankruptcy : At least 1 day since discharge or 1 year since dismissal of Chapter 7 or 13 Bankruptcy, or open Chapter 13 Bankruptcy must be paid-off through escrow at funding.
Foreclosure/Notice of Default : At least 1 year since foreclosure/notice of default released.

Second Lien Credit Grade Category: "C"
Combined Loan-To-Value Ratio : Maximum of 70%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $100,000
Credit Bureau Risk Score : Minimum of 560
Mortgage History : No more than 1 delinquency of 90 days during the past 12 months. Delinquencies of 30 days and 60 days are not restricted.
Bankruptcy : At least 1 day since discharge or 1 year since dismissal of Chapter 7 or 13 Bankruptcy.
Foreclosure/Notice of Default : At least 1 year since foreclosure/notice of default released.

First Lien Credit Grade Category: "C-"
Loan-To-Value Ratio : Maximum of 70%
Debt-To-Income Ratio : Maximum of 55%
Loan Amount : Maximum of $500,000
Credit Bureau Risk Score : Minimum of 500
Mortgage History : No more than 2 delinquencies of 90 days during the past 12 months. Delinquencies of 30 days and 60 days are not restricted.
Bankruptcy : At least 1 day since discharge or dismissal of Chapter 7 or 13 Bankruptcy, or open Chapter 13 Bankruptcy must be paid-off through escrow at funding.
Foreclosure/Notice of Default : None at time of funding.

First Lien Credit Grade Category: "D"
Loan-To-Value Ratio : Maximum of 65%
Debt-To-Income Ratio : Maximum of 45%
Loan Amount : Maximum of $250,000
Credit Bureau Risk Score : Minimum of 500
Mortgage History : Open Notice of default must be cured at time of funding.
Bankruptcy : At least 1 day since discharge or dismissal of Chapter 7 or 13 Bankruptcy, or open Chapter 13 Bankruptcy must be paid-off through escrow at funding.
Foreclosure/Notice of Default : Notice of default is acceptable but must be cured at time of funding.

The loan-to-value ratios or combined loan-to-value ratios, as applicable, debt-to-income ratios, and loan amounts stated above are maximum levels for a given credit grade category. There are additional restrictions on loan-to-value ratios or combined loan-to-value ratios, as applicable, debt-to-income ratios, and loan amounts depending on, but not limited to, the occupancy status of the mortgaged property, the type of mortgaged property, and the documentation program.

The " ***Credit Bureau Risk Score*** " is a statistical credit score obtained by Countrywide Home Loans in connection with the loan application to help assess a borrower's creditworthiness. Credit Bureau Risk Scores are generated by models developed by a third party and are made available to mortgage lenders through three national credit bureaus. The models were derived by analyzing data on consumers in order to establish patterns which are believed to be indicative of the borrower's probability of default. The Credit Bureau Risk Scores are based on a borrower's historical credit data, including, among other things, payment history, delinquencies on accounts, levels of outstanding indebtedness, length of client history, types of credit, and bankruptcy experience. Credit Bureau Risk

Scores range from approximately 250 to approximately 900, with higher scores indicating an individual with a more favorable credit history compared to an individual with a lower score. However, a Credit Bureau Risk Score purports only to be a measurement of the relative degree of risk a borrower represents to a lender, i.e., that a borrower with a higher score is statistically expected to be less likely to default in payment than a borrower with a lower score. In addition, it should be noted that Credit Bureau Risk Scores were developed to indicate a level of default probability over a two-year period which does not correspond to the life of a mortgage loan. Furthermore, Credit Bureau Risk Scores were not developed specifically for use in connection with mortgage loans, but for consumer loans in general. Therefore, a Credit Bureau Risk Score does not take into consideration the effect of mortgage loan characteristics on the probability of repayment by the borrower. The Credit Bureau Risk Scores set forth in Annex A hereto were obtained either at the time of origination of the Mortgage Loan or more recently. The Credit Bureau Risk Score is used as an aid to, not a substitute for, the underwriter's judgment.

In determining a Credit Bureau Risk Score for a particular borrower, Countrywide Home Loans attempts to obtain Credit Bureau Risk Scores from each of the three national credit bureaus that produce these scores. Although different scores may be available from each of the three national credit bureaus for a particular borrower, Countrywide Home Loans will use only one score in its determination of whether to underwrite a mortgage loan, based on the following methodology: if scores are available from each of the three national credit bureaus, Countrywide Home Loans will disregard the highest and lowest scores, and use the remaining score; and if scores are available from only two of the three national credit bureaus, Countrywide Home Loans will use the lower of the two scores. In the case of a mortgage loan with more than one applicant, Countrywide Home Loans will use the Credit Bureau Risk Score of the applicant contributing the highest percentage of the total qualifying income.

If only one score is available, or no score is available, Countrywide Home Loans will follow its limited credit guidelines. Under the limited credit guidelines, credit histories may be developed using rent verification from current and/or previous landlords, proof of payment to utilities such as telephone, or verification from other sources of credit or services for which the applicant has (or had) a regular financial obligation. In general, applications with the aforementioned type of credit documentation are limited to A- risk and 80% loan-to-value ratio or combined loan-to-value ratio, as applicable. For applicants with established mortgage payment history of at least 12 months and one credit score or no credit score, the mortgage payment history may be used in lieu of a credit score to determine a risk grade.

Mortgage Loans other than Credit-Blemished Mortgage Loans . The Statistical Calculation Pool Mortgage Loans in Loan Group 2 that were not originated in accordance with its underwriting standards for credit-blemished mortgage loans were originated generally in accordance with the procedures set forth in the prospectus under " *Loan Program—Underwriting Standards* ", subject to the exceptions noted below. Those Statistical Calculation Pool Mortgage Loans are identified in the "Loan Documentation Type" tables in Annex A to this prospectus supplement as either "Full/Alternative", "Reduced", "Preferred", "Streamlined", "Stated Income/Stated Asset", "No Ratio" or "No Income/No Asset".

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "Full/Alternative", the related underwriting guidelines generally permit a borrower to provide W-2 forms instead of tax returns covering the most recent two years, permit bank statements in lieu of verification of deposits and permit alternative methods of employment verification.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "Reduced", under the related underwriting guidelines, some underwriting documentation concerning income, employment and asset verification is waived. Countrywide Home Loans obtained from a prospective borrower either a verification of deposit or bank statements for the two-month period immediately before the date of the mortgage loan application or verbal verification of employment. Since information relating to a prospective borrower's income and employment is not verified, the borrower's debt-to-income ratios are calculated based on the information provided by the borrower in the mortgage loan application.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "Preferred", those Mortgage Loans were originated under Countrywide Home Loans' Preferred Processing Program. Countrywide Home Loans' Preferred Processing Program is generally available to borrowers possessing higher Credit Bureau Risk Scores, which indicate a more favorable credit history, and who give Countrywide Home Loans the right to obtain the tax returns they filed for the preceding two years. Countrywide Home Loans may waive some documentation requirements for Mortgage Loans originated under the Preferred Processing Program.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "Streamlined", those Mortgage Loans were originated under Countrywide Home Loans' Streamlined Documentation Program. Countrywide Home Loans' Streamlined Documentation Program is generally available for borrowers who are refinancing an existing mortgage loan that was originated or acquired by Countrywide Home Loans provided that, among other things, the mortgage loan has not been more than 30 days delinquent in payment during the previous twelve-month period. Under the Streamlined Documentation Program, appraisals are obtained only if the loan amount of the loan being refinanced had a Loan-to-Value Ratio at the time of origination in excess of 80% or if the loan amount of the new loan being originated is greater than $650,000. In addition, under the Streamlined Documentation Program, a credit report is obtained but only a limited credit review is conducted, no income or asset verification is required, and telephonic verification of employment is permitted. The maximum Loan-to-Value Ratio under the Streamlined Documentation Program ranges up to 95%.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "Stated Income/Stated Asset", the related mortgage loan applications were generally reviewed to determine that the stated income was reasonable for the borrower's employment and that the stated assets were consistent with the borrower's income.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "No Ratio", the borrower is not required to disclose his or her income although the nature of employment is disclosed and assets are verified. Countrywide Home Loans generally conducted a verbal verification of employment of the borrower prior to origination.

In the case of Mortgage Loans identified in "Loan Documentation Type" tables as "No Income/No Asset", under the related underwriting guidelines, no documentation relating to a prospective borrower's income, employment or assets is required and therefore debt-to-income ratios are not calculated or included in the underwriting analysis, or if the documentation or calculations are included in a mortgage loan file, they are not taken into account for purposes of the underwriting analysis.

Mortgage Loans not originated in accordance with Countrywide Home Loans' underwriting standards for credit-blemished mortgage loans are assigned credit grade categories as described under " *—Credit-Blemished Mortgage Loans* " above, and Credit Bureau Risk Scores for those Mortgage Loans are generally obtained as described under " *—Credit-Blemished Mortgage Loans* ".